(20,554.)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1907.

No. 217.

THE MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE, APPELLANT,

vs.

KNOXVILLE WATER COMPANY.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF TENNESSEE.

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1 In the United States Circuit Court for the Northern Division of the Eastern District of Tennessee.

#1260. In Equity.

THE KNOXVILLE WATER COMPANY, Plaintiff,
vs.
THE MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE, Def't.

Messrs. Shields, Cates & Mountcastle, and J. W. Caldwell, Knoxville, Tenn., Solicitors for Plaintiff.
J. W. Culton, and Pickle & Turner, Knoxville, Tenn., Solicitors for Defendant.

Transcript of all proceedings had in the above styled cause before the Hon. C. D. Clark, U. S. District Judge for the Eastern and Middle Districts of Tennessee, which are as follows, to-wit:

2 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. —.

KNOXVILLE WATER CO.
vs.
MAYOR & ALDERMEN OF CITY OF KNOXVILLE TENN.

Cost Bond.

I hereby acknowledge myself security for costs in this case.
THE UNITED STATES FIDELITY & GUARANTY CO.,
By MAYNARD & DAVIES, [SEAL.]
Agents and Attorneys in Fact.

[Seal The United States Fidelity & Guaranty Company, Incorporated, 1896.]

Taken and acknowledged before me this 7 day of Dec. 1901.
J. T. CARTER,
Dep. Clerk U. S. Circuit Court, E. D. T.

NORTHERN DIVISION OF THE EASTERN DISTRICT OF TENNESSEE, *ss:*

I —— —— a resident of said District, do solemnly swear, that after paying my just debts and liabilities, I am worth —— Dollars, in real estate within the jurisdiction of this Court, and subject to execution, levy and sale.

—— ——.

Sworn to and subscribed before me this — day o- —— A. D. 189–.

——— ———,
Clerk U. S. —— Court, E. D. T.

3 (Endorsement:) No. 1260 U. S. Circuit Court, E. D. T. Northern Division. Knoxville Water Co. Plaintiff *vs.* Mayor & Aldermen of the City of Knoxville Defendant Cost Bond. Filed —— 189– Clerk Filed Dec. 7 1901 J. T. Carter, Deputy Clerk. Plaintiff's Attorney.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

KNOXVILLE WATER COMPANY, Plaintiff,
vs.
MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE, TENNESSEE, Defendant.

4 To the Honorable the Judges of the Circuit Court of the United States in and for the Northern Division of the Eastern District of Tennessee:

The Knoxville Water Company, a Citizen of the State of Tennessee, and a corporation chartered and organized under the laws of the State of Tennessee, brings this, its bill of complaint, against the Mayor and Aldermen of the City of Knoxville, Tennessee, a Municipal Corporation, chartered under the laws of the State of Tennessee, and located in Knox County, Tennessee, in the Northern Division of the Eastern District of Tennessee.

And thereupon your Orator complains and shows:

First.

That it, Knoxville Water Company, is a corporation, chartered and organized under the laws of the State of Tennessee, Section 1, Chapter 104, of the Acts of the General Assembly of the State of Tennessee for 1877, and a duly certified copy of the charter issued to your Orator by the State of Tennessee is herewith filed as Exhibit #1 to this bill, and is made a part of the same, but need not be copied in issuing process.

The defendant, Mayor and Aldermen of the City of Knoxville, is a Municipal Corporation, chartered under the laws of the State of Tennessee, and is located in Knox County, in said State, and in the Northern Division of the Eastern District of Tennessee.

Second.

By the terms of said charter granted to your Orator, as aforesaid, your Orator was authorized to construct a system of water works at Knoxville, and its charter, among other things contained the
5 following:

"The business of said Company shall be to establish and

construct water works in or near the City of Knoxville, Tennessee, and it shall be the duty of said Company to build, furnish and equip water works of sufficient capacity to furnish the corporate authorities and inhabitants of said City with water."

* * * * * * *

"The Company," that is your Orator, "shall have power * * * to contract with said inhabitants, and with the corporate authorities of said City, or any incorporated Companies, for the use of said water, and charge such price for the same as may be agreed upon between said Company and said parties, and consumers shall be subject to all such reasonable rules and regulations respecting the use and waste of said water as the directors of the Company may from — to time prescribe."

Third.

That in the year 1882 the defendant was a City of some ten or eleven thousand inhabitants, but wholly without a water supply, either for Municipal purposes or the use and necessities of its inhabitants, save only such as was afforded by the streams in and about the City, and the wells and cisterns which had been provided by individual inhabitants for their own use. That among other powers conferred upon the defendant by the laws of the State of Tennessee, was the power:

"To provide the City with water by water works within or beyond the boundaries of the City, or provide for supplying the City with water otherwise, and to provide for the prevention and extinction of fires and to organize and establish fire companies."

In pursuance of this power and to carry out the duty owed by it to its inhabitants, the defendant had some time prior to 1882 determined to build its own water plant for the purpose of supplying itself and its inhabitants with water, and to that end had acquired a considerable amount of real estate lying principally in the First and Fifth Wards of the City of Knoxville—the property in the First Ward was located upon the Tennessee River and was intended to be used as a pumping station, and the property in the Fifth Ward was upon a high hill and intended to be used as a reservoir—but
6 it became apparent to the corporate authorities of the Defendant that the building and erection and maintenance of a plant sufficient to supply the needs of Defendant and its inhabitants with water would envolve a much larger sum than defendant could safely afford to burden itself with, and it was resolved by the proper corporate authorities of the Defendant that its needs and necessities, and those of its inhabitants, would be best subserved by making a contract with some individual, company or private corporation to build a plant sufficient to supply said defendant and its inhabitants with water, and thereupon in the year 1882 Defendant, through its proper officials, and by advertisement published in the newspapers printed in the City of Knoxville, invited bids and proposals for the erection of water works in the City of Knoxville, from any responsible person or Company, said person or company to build

and own the water works, giving the City the option of purchasing them at a certain period or periods to be agreed upon.

In pursuance of said advertisement, two propositions were submitted to the defendant, one by the City Water Company, a Corporation, and the other by your Orator. The proposition submitted by your orator was deemed more advantageous to Defendant and was accepted by Defendant, and thereupon on the first day of July 1882, your Orator and the Defendant duly and legally entered into a contract and agreement for the construction of water works within the City of Knoxville, a copy of which said contract and agreement is herewith filed as Exhibit #2 to this bill, and made a part of the same but need not be copied in issuing process.

7 By a reference to said Exhibit #2 your Honors will see that in order to supply said City with water for fire protection and public, sanitary and domestic purposes, your Orator among other things agreed:

"A. To erect and establish upon and on the land acquired by the City for that purpose a system of water works sufficient to supply Defendant and its inhabitants with water to be taken from the *Tennessee River at the site purchased by defendant for that purpose.*

B. To purchase from defendant the property already acquired by it for the purpose of erecting water works, and to pay therefor within thirty days after the execution of said contract, and before commencing the construction of said works, the sum of Seven Thousand, Eight Hundred ($7,800) Dollars.

C. To erect at the points designated by Defendant in said contract Seventy Five (75) fire hydrants, and afterwards as many fire hydrants as it might order.

D. To furnish, free of charge to Defendant, water from such hydrants for flushing its sewers and gutters, and for all purposes of the fire department, the City Hall Buildings and Office, and prisons therein.

E. *To supply private consumers with water at a rate not exceeding five cents per one hundred gallons, provided,* however, that the entire cost of introducing water from the mains into private premises, including cost of meter when used shall be borne by the party introducing or ordering the same.

F. To maintain said water works in such condition as shall be sufficient and necessary to enable your Orator to comply with said contract for the period of thirty years from January 1st, 1883, unless defendant should become the owner of said water works within that period in the manner stipulated in said contract."

The defendant, among other things agreed to pay fifty ($50.00) Dollars per annum for each and all of the fire hydrants to be erected under said contract and to give a franchise in all of its Streets and public thoroughfares for the purpose of laying down the mains and pipes of your Orator, and not to grant to any other person or corporation any contract or privilege to furnish water to the City of Knoxville, or the privilege of erecting upon the public streets or thoroughfares for the purpose of furnishing said City or its in-

habitants with water for the full period of thirty years from the first day of August, 1883.

8 Under and by said contract it was mutually agreed between plaintiff and defendant that at the expiration of fifteen years from the first day of August, 1883, Defendant should have the right to purchase from your Orator the waterworks and all the property, right, franchises, etc., provided in and growing out of said contract; the price to be agreed upon between your Orator and defendant, or to be fixed by appraisal in the manner stipulated in said contract.

The bond provided for in said contract was duly executed by your Orator, who has in all respects complied with said contract.

When said contract of July 1st, 1882, was entered into by your Orator and Defendant, the Defendant City of Knoxville was comprised of its first nine wards as it now exists, and the plant and property of your Orator in these nine wards, in due time, were built in pursuance of and in compliance with said contract, exhibit #2 hereto, and your Orator began to furnish water to defendant and its inhabitants under and in compliance with the terms and provisions of said contract.

Fourth.

That on the 18th day of April, 1891, the town of North Knoxville, then a Municipal Corporation contiguous to defendant entered into a contract with a co-partnership styled Wheeler & Parks, for the latter to supply said town and its inhabitants with water until June 3d, 1913, a duly certified copy of this contract is herewith filed as Exhibit #3 to this bill and is made a part of the same, but need not be copied in issuing process.

9 By Section 9 of said contract it was provided that "water to be furnished private consumers shall be charged for at not exceeding the rates contained in the schedule set forth in said contract.

This contract between said town of North Knoxville and Wheeler & Parks was, on November 17, 1893, duly assigned by said Wheeler & Parks to your Orator, who *is* — all respects complied with its terms and provisions.

Fifth.

That in 1891, the Lonsdale-Beaumont Water Company was Chartered under the laws of the State of Tennessee, Chapter 115 of the Acts of the General Assembly of the State of Tennessee for 1885, for the purpose of supplying water to the town of West Knoxville, which was another separate Municipality contiguous to defendant City of Knoxville; a duly certified copy of the charter of the Lonsdale-Beaumont Water Company is herewith filed as Exhibit #4 to this Bill, and is made a part of the same, but need not be copied in issuing process.

On the 17th day of September, 1892, said town of West Knoxville, and the said Lonsdale-Beaumont Water Company, duly and legally entered into a contract, under and by which said Lonsdale-

Beaumont Water Company agreed to erect and build, and did erect and build a system of water works to supply said town and its inhabitants with water, and under and by Section XI of said contract it was provided that said Lonsdale-Beaumont Water Company "shall not charge consumers during the continuance of the franchise granted by said contract, exceeding the maximum annual rates" provided and set out in said contract; a certified copy of said contract is herewith filed as Exhibit #5 to this bill, and is made a part of the same, but need not be copied in issuing process.

Sixth.

The powers and authority vested by the laws of the State of Tennessee in the aforesaid towns of North and West Knoxville in regard to water supply, are set forth in their charters in identically the same language as follows:

"To provide the town with water works, or contract with others for water within or beyond the town limits, for town and corporate purposes."

By Chapter 323 of the Acts of the General Assembly of the State of Tennessee for 1897, the City of Knoxville, and the said towns of West Knoxville and North Knoxville were consolidated—the town of West Knoxville becoming the 10th Ward and the town of North Knoxville becoming the 11th Ward of Defendant—and by Section "8" of said Act of consolidation it was provided and enacted "that all valid and lawful contracts of the towns of West Knoxville and of North Knoxville, shall be carried out and performed by the Board of Mayor and Aldermen of the City of Knoxville "and your Orator avers that the aforesaid contracts of April 18th, 1891, and September 17th, 1892, Exhibits #3 and #5 hereto were valid and lawful contracts of said towns of West Knoxville and North Knoxville.

Seventh.

That prior to the consolidation of the City of Knoxville and the towns of North and West Knoxville, and on the first day of April, 1895, your Orator had voluntarily published and put into operation a schedule of rates and charges for the use of water, very much below what it was entitled to charge under the contract of July 1st, 1882, in that the maximum charge for metered water was placed at the rate of two and one half cents per one hundred gallons or twenty five cents per thousand gallons, as against five cents per one hundred gallons, or fifty cents per one thousand gallons, provided in said contract of July 1st, 1882; and further provided as the unit of charge, or, as is sometimes called, the fixture charge, an annual rate of $6.00 for a house containing four rooms. A copy of these rates, with the rules and regulations appertaining thereto is herewith filed as Exhibit #6 to this bill, and is made a part of the same, but need not be copied in issuing process.

Subsequent to the publication of these rates and charges, and on the 17th day of May, 1895, the City of Knoxville passed an ordinance dealing with the question of meters and meter rates to be

charged by your Orator, but in fact only adopting the meter rates then in force by your Orator, which had been promulgated by it on April 1st, 1895, as aforesaid.

The purpose of defendant in passing this last named ordinance was not to change the rates charged by your Orator against which there was no complaint, but to make certain regulations in regard to furnishing meters to water consumers, but these regulations in regard to meters were found to be in conflict with the provisions of the contract between your Orator and defendant, who never sought or attempted to enforce said ordinance of May 17, 1895, but your Orator continued to charge the rates set forth in the Schedule, Exhibit #6 hereto, and was charging and enforcing said rates on the 19th day of October, 1899, when another contract and agreement was entered into between your Orator and defendant, as will hereinafter be shown.

12 Eighth.

That in the year 1899, for business reasons and in order to enable the Lonsdale-Beaumont Water Company to continue to comply with its contract with the former town of West Knoxville, as hereinbefore set out, it became desirable that a consolidation of said Lonsdale-Beaumont Water Company with your Orator be effected, and thereupon said Companies in compliance with the laws of the State of Tennessee made application to Defendant for permission to consolidate, and that the Consolidated Company might be released from the bond limitation contained in the aforesaid contract of July 1st, 1882, Exhibit #2 hereto; but *but* before defendant would give its consent and approval to said consolidation Defendant annexed certain conditions thereto amending the contracts then existing between said consolidating Companies and the Defendant, and particularly amending in its own interest the contract of July 1st, 1882, and requiring that the ordinance granting its approval and consent to said consolidation and containing said amendments to said contract, should, within thirty days, be accepted in writing by said consolidating Companies.

Among the material conditions annexed to said consent and approval were:

A. A reservation of the rates provided in the Lonsdale-Beaumont contract of September 17th, 1892, in favor of the inhabitants of the 10th Ward of the City, (formerly the town of West Knoxville) and that the water to be supplied to said 10th Ward should be equal in quality to that then being supplied by the Knoxville Water Company, which was filtered and was recognized to be of the very best quality.

13 This condition was especially insisted upon by the inhabitants of the 10th Ward of the City of Knoxville acting through a committee and an Attorney who appeared before the Council, and in fact drafted that part of said ordinance.

B. That the Knoxville Water Company would continue to furnish to the inhabitants of the remaining Wards of the City of Knoxville, other than the 10th Ward, filtered water at a maximum rate

not exceeding the schedule of rates and charges then in force and operation by your Orator, which was the schedule of rates set forth in Exhibit #6 hereto.

This was the first provision making it obligatory upon your Orator to furnish filtered water to the inhabitants of the City of Knoxville (except the provision contained in the North Knoxville contract, and which was limited to that territory), and by this provision the rates which your Orator had voluntarily scaled from five cents per one hundred gallons to a maximum of two and one half cents per one hundred gallons was adopted by the City, as well as the fixture charges contained in said schedule Exhibit #6 hereto.

C. The option and right to purchase reserved by Defendant in its contract of July 1st, 1882, with your Orator and covering only the property of your Orator was extended to all the property which it then owned or might afterwards acquire, or which might be acquired by the consolidated company.

So may it please your Honors the Defendant and your Orator on the 20th day of October 1899, by an ordinance-Contract on that date legally passed by the defendant and accepted by your
14 Orator entered into a new contract amending the contracts then existing between your Orator and the Defendant, all of which appears from a certified copy of said ordinance of October 20th, 1899, and the acceptance thereof by the Lonsdale-Beaumont Water Company and your Orator, herewith filed as Exhibit #7 hereto, and made a part of this bill, but need not be copied in issuing process.

On January 1st, 1900, the consolidation provided by the ordinance contract of October 20th, 1899, was affected by a conveyance by the Lonsdale-Beaumont Water Company of all its property, contracts, rights, franchises, etc., to your Orator, and this conveyance was duly recorded in the office of the Secretary of State of the State of Tennessee, as provided by the laws of said State of Tennessee.

Ninth.

Your Orator further shows, avers and charges that the rates provided in the aforesaid ordinance contract of October 20th, 1899, were in all respects fair, just and reasonable charges to defendant and its inhabitants, and were so regarded and as such approved by the Defendant, and no question thereon, or your Orator's right to charge the rates provided and specified in its several contracts with the Defendant, was ever made until in January 1900, a short time before the election of a Mayor, Board of Public Works and Aldermen of the several wards for the City of Knoxville, when for political purposes an ordinance was introduced before the Board of Mayor and Aldermen of the Defendant at the instance of some of the partisans of the candidates contesting said election seeking to regulate and lower the rates and charges then being enforced by your Orator under its aforesaid contracts with defendant, and particularly the ordinance contract of October 20, 1899, but the Board of Mayor and
15 Aldermen of *of* Defendant refused and declined to pass *asid* ordinance. Later in the year 1900, to-wit: on the 15 day of

June the identical ordinance which Defendant had refused to pass in January of that year, as aforesaid, was again introduced by one of the Aldermen and after attention had been directed to the fact that this last ordinance was identical with the ordinance which had been discredited and rejected by the Defendant in January 1900, certain amendments, changes and alterations were made therein without reason, logic or a proper understanding of their effect, and on July 27th, 1900, said ordinance as amended was finally passed by Defendant. This ordinance provided a heavy penalty to-wit, a penalty of not less than Ten ($10.00) Dollars, nor more than Fifty (50.00) Dollars, for any violation of said ordinance, and certain prosecutions thereunder were com-enced against your Orator, who continued to charge the reasonable rates provided in the ordinance-contract of October 20, 1899, and these prosecutions being tried before the Recorder of the Defen*adn*t your Orator was fined $50.00 in each case and sentenced to the Work House of Knox County in default of the payment of said fines; from the judgment of the Recorder in these several cases your Orator appealed to the Circuit Court of Knox County where Defendant was proceeding to prosecute said cases vigorously when it was discovered that said ordinance of July 27th, 1900, was so defective and uncertain in its provisions that the Defendant on March 30th, 1900, passed another ordinance by which it was attempted to correct the defects and uncertainties in the prior ordinance, but re-enacting the same rates. A certified copy of said ordinance of March 30th, 1901, is herewith filed marked Exhibit #8 to this bill and is made a part of the same but need not
16 be copied in issuing process; by this ordinance all of your Orator's just and reasonable rates were reduced.

By said ordinance of March 30th, 1901 th- aforesaid ordinance of July 27th, 1900, was repealed and thereupon Defendant dismissed the prosecutions instituted by it under said ordinance of July 27th, 1900.

About May 1st, 1901, the Defendant before its Recorder brought against your Orator, who continued to charge and enforce the fair, just and reasonable rates provided in the ordinance-contract of October 20, 1899, charging your Orator with a violation of the aforesaid ordinance of March 30, 1901, in charging one W. M. McClure for water in excess of th- rates prescribed in said ordinance of March 30, 1901, which were *form* twenty to thirty three per cent. (20 to 33%) lower than the rates provided by the ordinance-contract of October 20, 1899, which yout Orator was enforcing and claiming and still claims the right to enforce. This suit was tried before the Recorder of Defendant who finding that the rates charged by your Orator for three separate and several premises were $1.15 in excess of the rates prescribed by the ordinance ov March 30, 1901, fined your Orator the sum of Fifty ($50.00) Dollars, and sentenced your Orator to the Work House in default of the payment of that fine. From this judgment of Defendant's Recorder, your Orator appealed to the Circuit Court of Knox County where the case was tried by the Circuit Judge without the intervention of a jury, who found and adjudged that said ordinance of March 30, 1901 was invalid, because

passed at two invalid special meetings of the Board of Mayor & Aldermen of Defendnat, and from this judgment of the Circuit Court of Knox County, the Defendant appealed to the Supreme Court of the State of Tennessee, where your Orator not only insisted that
17 said ordinance of March 30, 1901, was invalid because passed at illegal special meetings, but, as set out in the various pleas interposed by it in the Circuit Court contended that said Ordinance of March 30, 1901, impaired the obligations of the contracts existing between your orator and Defendant, and deprived your Orator of its property and liberty without due process of law, and was therefore in contravention and violation of the Constitution of the United States, Article I, Section 10, and the 1st, section of the 14th, Amendment of said Constitution, but the Supreme Court of the State of Tennessee, held that said ordinance was validly passed under a power conferrred upon the Defendant by the State of Tennessee, and entered judgment against your Orator for the sum of Ten ($10.00) Dollars, and all costs of the cause, but provided that said judgment should be without prejudice to the right of your Orator to litigate and show in such way as it may be advised that the rates prescribed by said ordinance of March 30, 1901, were and are unreasonable and oppressive, which question had not been considered by said Supreme Court in arriving at its judgment.

Said Supreme Court of Tennessee also held that said ordinance was not in contravention and violation of Article II, Section 10, of the Constitution of the United States, or the 1st Section of the 14th, Amendment of said Constitution:—to said holding your Orator saved its exception, and has now been granted a writ of error and supersedeas removing said case to the Supreme Court of the United States, where your Orator hopes and expects to have the judgment of the Supreme Court of the State of Tennessee, holding that
18 said ordinance of March 30, 1901, is not in violation of the Constitution of the United States, and the amendment thereto, reversed, and said ordinance declared null and void.

Your orator further shows that while the aforesaid cause was pending in the Supreme Court of the State of Tennessee, the Defendant passed a third ordinance on the 4th day of October 1901, which is in all respects similar to the aforesaid ordinance of March 30, 1901. Said ordinance of October 4th, 1901, did not repeal the ordinance of March 30, 1901, and was passed to meet the then probable holding by the Supreme Court that the said ordinance of March 30, 1901, was void because not properly enacted and passed.

Tenth.

Your Orator further shows and charges that by the term of its charter and its several contracts with defendant it accepted the duty of building, furnishing, equipping and maintaining water works of sufficient capacity to furnish the corporate authorities and inhabitants of Defendant with water from the Tennessee River and your Orator has in every way complied with its agreements and undertakings and has constructed and has now in operation a system of water works in every way adequate to the needs of Defend-

ant and its inhabitants: it has and has in place the usual extensive and costly machinery and on account of the rough uneven and hilly territory upon which the City of Knoxville is located it is compelled to pump twice a large part of the water furnished Defendant and its inhabitants, to erect and maintain costly stand pipes and because of the scattered situation of its patrons it has been necessary to lay about seventy miles of iron pipe and mains; and further because of the muddy condition of the water *of the water* of the Tennessee River in its natural condition your Orator has been compelled
19 to erect large reservoirs to receive and hold the water from its filtering plant which cost large sums to build and which now your Orator is enlarging to meet the necessities of Defendant and its inhabitants and to enable your Orator to fully comply with its contracts and undertakings.

The construction of this plant has cost your Orator more than $1,000,000.00, and on March 31st, 1901, (the day suc-eeding the passage of Defendant's aforesaid ordinance of March 30, 1901) which was the end of your Orator's fiscal year, it had outstanding $150,000.00, first mortgage bonds bearing six per cent. interest and payable in 1913: $85,000.00 of "Debenture Bonds" so called, bear-in- six per cent. interest, and likewise payable in 1913; $295,000.00 of "Preferred Stock," so called, bearing six per cent. interest, or calling for a cumulative dividend of that rate; about $300,000.00 of floating indebtedness bearing six per cent. interest making an aggregate of $830,000.00, upon which your Orator was compelled to pay interest during the year ending March 31st, 1901, amounting to $48,127.78.

The outstanding stock of your Orator, exclusive of the aforesaid "Preferred Stock" on March 31, 1901, amounted to $654,000.00, which represents large amounts paid into your Orator by the holders of the shares of stock which have cost many of the holders of the principal part of the stock from *to* $40 to $50.00 per share.

In order that your Honors may more fully understand the hard conditions under which your Orator has labored in building, enlarging and maintaining its plant so as — all times to be able to meet the needs of Defendant and its inhabitants, your Orator shows
20 and charges that the bond limitation of $150,000.00, contained in the original contract of July 1st, 1882, compelled the issuance of the so called "Debenture Bonds," which were long time coupon notes of the Company, and, those having been exhausted in further improvements upon the plant, in 1890, and again in 1893, your Orator asked Defendant for permission to issue additional bonds to build a new pumping station, a new reservoir, filtering plant and make other improvements to meet the growing needs of the inhabitants of Defendant, but two several ordinances granting such permission were vetoed by the Mayor of Defendant, so that in 1893 and 1894, Orator was compelled to issue and sell $295,000.00, of what is hereinbefore called "Preferred Stock," which was issued by and with the consent of all the stockholders, and bears the same relation to your Orator as a bond in that it entitles the holder to receive interest or a dividend of six per cent. per annum before the

stockholders can receive anything on their stock. The sums realized from the sale of said "Preferred Stock" as aforesaid, were soon spent in improvements upon, enlargements of and additions to your Orator's plant, and the revenues of your Orator being wholly inadequate to pay the operating expenses, fixed charges of interest and the ordinary depreciation, without reference to the growing needs of Defendant's inhabitants requiring enlargements of an- additions to the plant, the aforesaid floating debt of $300,000.00 was created by the cost of improvements and additions to the plant, including the cost of the property of the Lonsdale-Beaumont Water Company purchased by your Orator as hereinbefore shown. And here your Orator charges that it has not received that benefit for which it reasonably hoped and expected from the release of the bond limit contained in the aforesaid ordinance-contract of October 20, 1899,

21 because the continued assaults by Defendant have prevented, to a large extent, a favorable flotation of new bonds to fund indebtedness of your Orator on March 1st, 1901, as hereinbefore shown, so that your Orator's interest charges are not and cannot be substantially reduced, but will be increased in the future.

Your Orator shows and charges that its necessary operating expenses during the year ending March 31, 1901, amounted to $35,775.89, exclusive of the sums allowable on account of ordinary depreciation of plant amounting to about $20,000.00, and special depreciation or replacement amounting to about $30,000.00, during the current year the necessary operating expenses will be heavily increased resultant upon an increase of about $100,000.00, in the assessment for taxation of the property of your Orator, and other causes: the amount required on account of ordinary depreciation will be about the same and another large outlay on account of special depreciation in or replacement of machinery, etc., will be necessary.

Your Orator further shows and charges that in the operation of its business it has only sought to enforce the rates prescribed by its contracts with Defendant, and particularly the rates prescribed in the aforesaid ordinance-contract of October 20, 1899, yet with the most careful manag-ment and closest attention your Orator's total revenues for water from all sources, both in and out of the City of Knoxville, during the aforesaid fiscal year, ending March 31, 1901, amounted to only $88,649.41, of which $10,540.22, was collected on services wholly outside of the territor-al limits of Defendant, leaving

22 a balance of $78,109.19 for services within the City of Knoxville.

Your Orator charges that the schedule of rates prescribed in Defendant's ordinances of March 30, 1901, if applied to the same services producing, under your Orator's and Def't's contract rates, the sum of $88,649.41, as aforesaid, would have produced a revenue of only $68,481.67, or a sum wholly inadequate to meet your Orator's necessary operating expenses and fixed charges of interest.

Your Orator charges that while the rates, which under its several contracts with Defendant, it has been enforcing are in every way just and reasonable to Defendant and its inhabitants, said rates are much lower than the rates in the City of Nashville, which own its

own water plant, and are also lower than the rates in the City of Chattanooga, a City of about the same population as Defendant, and said rates have never produced sufficient revenue to pay any dividend whatsoever upon any of the stock in your Orator, other than the so-called "Preferred Stock," hereinbefore shown and your Orator charges that upon its plant in which has been invested more than $1,000,000.00, it is not even under existing rates receiving the revenues which it is reasonably entitled to receive, and your Orator charges that under the rates sought to be enforced by Defendant its income will be wholly insufficient to meet necessary operating expenses and fixed charges of interest.

And so, may it please your Honors, your Orator charges that said ordinance of March 30, 1901, and said ordinance of October 4, 1901, are unreasonable, unjust and oppressive and therefore void.

Eleventh.

Your Orator further shows and charges that under the powers and authority conferred upon it by its charter, as hereinbefore shown, it has entered into, prior to the passage of Defendant's said ordinance of March 30, 1901, about four thousand agreements and con-
23 tracts with the inhabitants of Defendant to furnish to them, severally, water at the just and reasonable rates prescribed by the aforesaid ordinance-contract of October 20, 1899, but Defendant by its said ordinance of March 30, 1901, is attempting to deprive your Orator of its right to inforce said contracts and denies to your Orator the right to make any contract with its patrons except at or under the rate prescribed in said ordinance, of March 30, 1901.

Orator further charges that notwithstanding the numerous purposes for which Defendant receives water from Orator without charge as hereinbefore shown, and which in other Cities would produce a revenue of from $10,000.00 to $15,000.00 and the just and reasonable rates charged Defendant for those services for which payment is provided in the aforesaid contracts and agreements between Defendant and Orator, yet the Defendant is arbitrarily attempting to reduce the charges provided by said contracts to be paid by itself and to fix said charges at a lower rate without the consent of Orator.

Twelfth.

Your Orator is informed, believes and so further charges that the Defendant is wrongfully and unlawfully seeking by the enforcement of said ordinances of March 30, 1901, to reduce the revenues and income which your Orator is entitled to receive from the operation of its business and to so depreciate the value of the plant and property of Orator that Defendant under its aforesaid option reserved in the aforesaid contract of July 1st, 1882, and October 20, 1899, may be enable- to purchase and acquire the plant and property of your Orator below its real value and below the valuation which Orator under its contracts is entitled to have placed on same.

24 Thirteenth.

Your Orator charges that said ordinances of March 30, 1901, and October 4, 1901, were passed, enacted and ordained by Defendant

arbitrarily without any effort to show that the rates charged by your Orator were unreasonable and regardless of the burden, in any event, upon Defendant to show that the Orator's rates were unreasonable, without due and legal notice to Orator, and without proper and legal investigation of Orator's condition or the effect of the rates sought to be enforced by said ordinance.

Orator charges that Defendant did not know, nor did it seek to ascertain, what would be the effect of the meter rates prescribed in its ordinances, some of which are much below the actual cost of furnishing the consumers with water, and which on an average are between 30 and 33 per cent. lower than the meter rates provided in the schedule set forth in Exhibit #6 hereto, which were approved and adopted by the ordinance-contract of October 20, 1899.

Orator charges that Defendant did not know and did not seek to ascertain the effect which the reduced fixtures rates prescribed in its aforesaid ordinances would have upon the revenues of Orator, although the number of fixtures in the City of Knoxville to which said rates would be applicable could have been easily counted and ascertained.

Your Orator further charges that prior to the passage of Defendant's aforesaid ordinance of July 27th, 1900, said Defendant and its proper officials were duly notified and warned that the rates then being enforced by Orator under its contracts, as aforesaid, did not produce to Orator revenue sufficient to meet its necessary fixed charges and necessary operating expenses including all salaries, which to the higher officials of Orator were merely nominal: and prior to the passage of aforesaid ordinance of March 3, 1901, Defendant and its proper officials were informed as to the approximate gross revenue of Orator, its operating expenses and fixed charges, and Defendant and its proper officials were notified and warned that said revenues were wholly inadequate to meet and satisfy said operating expenses and fixed charges and that no dividend had ever been paid upon the stock of Defendant (other than the socalled "Preferred Stock") which was held and owned by about two hundred different people who had invested their money in your Orator and had received no sort of return therefrom.

Fourteenth.

Your Orator charges that the enforcement of the rates prescribed in the said ordinance of March 30, 1901, would have reduced the revenues of Orator for the fiscal year ending March 31, 1901, about $20,167.74, and that for the current year the reduction will be increased by reason of the larger number of cervices that are becoming metered.

Fifteenth.

Your Orator further shows that Defendant passed said ordinance of March 30, 1901, and October 4, 1901, in pursuance of an alleged power vested in it by Section 2, Chapter 104 of the Acts of Tennessee, 1877, which is as follows:

"Be it further enacted, That such charter shall not be granted until after leave to operate the same shall have been first had and

obtained from the corporate authorities of the City, town or village in which it is proposed to operate such water works, and such leave shall be certified by the Mayor or Recorder upon the application, and registered with it. And this act is in no way to interfere with or impair the police or general powers of the corporate authorities of such City, town or village, and such corporate authorities shall have power by ordinance to regulate the price of water supplied by such Company.

26 But Orator is advised and so charges that after Defendant in pursuance of the power in its charter to provide for supplying the City with water, and the power and authority invested in Orator and Defendant by the first Section of said Act of 1877, and any power invested in Defendant by the second section of said Act, had entered into the contracts and agreements herein before set out, said Defendant has no power under the guise of regulation to impair said contracts and reduce the rates therein provided without the consent of Orator; moreover, said Section 2 of Chapter 104 of the Acts of 1877, cannot apply to the rates which Orator is entitled to charge in the 10th Ward of the City of Knoxville under the Lonsdale-Beaumont contract because the said Lonsdale-Beaumont Water Company was not chartered under the Act of 1877, but under the aforesaid Act of 1885.

Sixteenth.

Your Orator is advised, and therefore further charges that the aforesaid ordinances of the Defendant Mayor & Aldermen of the City of Knoxville, passed on March 30, 1901, and October 4th, 1901, are void because:

1st. By said ordinance Defendant attempts to exercise judicial powers without notice to the parties affected thereby without a hearing of the controversy and without any investigation of the matter to be determined.

2nd. Said ordinances assume without lawful authority to regulate and control the operation of your Orator's business.

3rd. The rates, as prescribed by said ordinances, were fixed without any legal notice to Orator and without proper hearing or investigation, as aforesaid, and, if enforced, will operate to deprive Orator of its property without due process of law.

27 4th. Said ordinance impairs the obligations of the several contracts between Defendant and your Orator, and particularly of the aforesaid ordinance-contract of October 20, 1899, Exhibit #7 hereto, contrary to the Constitution of the United States.

5th. By its charter, Orator was granted the right to supply water to the City of Knoxville, and the inhabitants of said City and environs, at such rates as might be agreed upon by Orator and Defendant and its inhabitants which has been done as hereinbefore shown, and said ordinances impair the aforesaid contracts of Orator and deprive it of power and liberty to contract with its patrons, contrary to the Constitution of the United States.

6th. By its charter, and the contracts made with Defendant and its inhabitants in pursuance thereof, Orator was granted the right to invest such sum as was necessary to construct and maintain a sys-

tem of water works sufficient to supply the Defendant, its environs and their inhabitants, with water and charge therefor such rates as would afford a fair and reasonable return on its investment for these purposes but the ordinances passed by Defendant under the authority aforesaid, deprives Orator of this right and thus impairs its contracts and deprives it of its property and liberty without due process of law, contrary to the Constitution of the United States.

Seven-eenth.

Your Orators call the attention of your Honors to the third Section of Defendant's said ordinance which is as follows:

"Be it further ordained, That it shall be unlawful for any person, company, firm or corporation, or their officers, agents, servants or employees suplying water to inhabitants of the City of Knoxville to charge, demand or collect for water so supplied more than
28 the rates herinbefore set forth in Section I, of this ordinance, and it shall also be unlawful for any such person company firm or corporation or their officers, agents, servants or employees to cut off or otherwise interfere with the supply or refuse to furnish a supply of water to any consumer for failure to pay for same, provided such consumer tenders in lawful money the charge for such water at the rates aforesaid, and any violation of the provision of this Section of this ordinance shall be a misdemeanor and upon conviction thereof before the Recorder the offender shall be punishable by a fine of not less than Ten ($10.00) Dollars, nor more than Fifty ($50.00) Dollars for each offense."

And now your Orator shows that it is informed, and so charges, that it is the declared purpose of Defendant, within the near future and without regard to the pendency of the aforesaid cause in the Supreme Court of the United States, to institute a large number of suits and criminal prosecutions against Orator to compel it to obey the aforesaid unjust, unreasonable and illegal ordinances and by means of the excessive penalties therein provided replenish the depleted treasury of Defendant.

It is the purpose of Defendant under said ordinances to annul all the contracts and agreements existing between your Orator and its patrons and entered into under Orator's charter and aforesaid contracts with Defendant, and to compel Orator, by suits and prosecutions to make new contracts at lower and ruinous rates. A number of consumers of water have paid their bills under protest, and Orator is informed that when the next payment becomes due a larger number will so pay their bills, either with a view of suing Orator for the difference between Orator's present just and reasonable rates, and that fixed by the aforesaid unreasonable and illegal ordinances, or enforcing against Orator the harsh and unreasonable penalties provided in said ordinance.

A large number of persons supplied with water by Orator are insolvent, so that its only means of collecting the amounts due from time to time is to cut off water in default of payment as provided by the rules of the Company; and the amounts which from time to

time become due from water consumers are usually less than
29 the cost of collection, so that if Orator is prevented from enforcing said rule, a large portion of the amounts due and to become due will be absolutely lost.

Orator further charges that if its consumers and Defendant are permitted to institute the suits they are preparing to have instituted against Orator, the defense of said suits will entail a gr-evous burden and expense upon your Orator: that the existence of said illegal ordinances operates as a constant menace and disturbance to Orator's business and to its right to charge and collect its reasonable rates, and the income necessary to hold and save its property and franchises: that if it is compelled to furnish water at the rates fixed by said illegal ordinances, Orator fears that it will be driven to insolvency, default on its indebtedness and loss of its property and franchises: that the rates prescribed by said illegal ordinances are so unfair, unjust and unreasonable that the same will not produce sufficient revenues to pay the necessary operating expenses and fixed charges of Orator, without taking into consideration Orator's right to charge such rates as will pay all operating expenses, the whole fixed charges, and also a reasonable return and profits on amounts invested by Orator: that said unreasonable and unjust rates cannot be enforced without causing irreparable loss to Orator and the destruction and confiscation of its property, and unless said illegal ordinances are declared void and Defendant enjoined from enforcing same, irreparable loss and injury will result to your Orator.

To the end, therefore, that your Orator may have that relief to which he is justly entitled in the premises and which he can only obtain in a Court of Equity, that the Defendant may answer
30 the premises, but not upon oath, the benefit of which is expressly waived, your Orator now prays the Court:

1st. That the aforesaid ordinances passed by Defendant on March 30, 1901, and October 4th, 1901, be by proper decree declared illegal and void.

2nd. That the Court now grant to your Orator a writ of injunction restraining and enjoining the said Defendant, its agents, officials and Attorneys from instituting or prosecuting any suits whatsoever, except said suit now pending in the Supreme Court of the United States, for penalties on account of your Orator's failure to comply with said ordinances of March 30, 1901, and October 4th, 1901, or taking any step or proceedings whatsoever for the purpose of compelling your Orator to comply with said ordinances, until the further orders and decrees of this Court in the premises.

3rd. That on the hearing said injunction be made perpetual.

4th. For such other, further and general relief as to the Court may seem meet and proper.

And so may it please your Honors to grant unto your Orator a writ of subpœna to be directed to the said Defendant, Mayor & Aldermen of the City of Knoxville, requiring it, at a certain time, and under a certain penalty therein to be limited, to appear before your Honors in this Honorable Court, and then and there full,

true, direct and perfect answer make to all and singular the premises, but not under oath, which is waived, and to stand, perform and abide such other order, direction and decree as may be made against it in the premises, as should seem meet and agreeable in equity.

And so will your Orator ever pray.

CHARLES T. CATES, JR.,
Solicitor for Complainant.

J. W. CALDWELL,
Of Counsel.

31 UNITED STATES OF AMERICA,
Northern Division of the Eastern District of Tennessee:

On the 7th day of December, 1901, before me, personally appeared, Frank C. Kimball, the general Superintendent of the Knoxville Water Company, the Complainant in the foregoing bill, who made solem- oath that he had read the foregoing bill of complainant, and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters therein stated on information and belief, and as to those matters he believes it to be true.

FRANK C. KIMBALL.

Subscribed and sworn to before me on this the 7th, day of December 1901.

[SEAL.]

J. T. CARTER,
Deputy Clerk.

(Endorsements:) #1260. Original Injunction Bill. Knoxville Water Company, *vs.* Mayor & Aldermen of the City of Knoxville. Filed Dec. 7, 1901. 2:10 P. M. J. T. Carter, Deputy Clerk.

32 *Charter of Incorporation.*

The State of Tennessee to Knoxville Water Company.

STATE OF TENNESSEE:

Charter of Incorporation.

Be it known, That Peter Staub, Jno. M. Brooks, F. M. Lawree, Joseph T. McTeer, Hector Coffin, Alvin Barton, H. H. Ingersoll and associates are hereby constituted a body politic and corporate by the name a/d style of the Knoxville Water Company.

The general powers of said corporation are as follows:

1. To sue and be sued by the corporate name.

2. To have and use a common seal which it may alter at pleasure but if it has no common seal, then the signature of the name of the Corporation by any duly authorized officier shall be legal and binding.

3. To purchase and hold or receive by gift in addition to the personal property owned be said Corporation any real estate neces-

sary for the transaction of Corporate business. And also to purchase or accept any real estate in payment or part payment of any debt due to the corporation. And sell realty for corporation purposes.

4. To establish by laws and make all rules and regulations not inconsistent with the Constitution and laws which may be deemed expedient for the management of corporate affairs. And to appoint such subordinate officers and agents in addition to the President and Secretary or Treasurer as the business of the Corporation may require, designate the name of the officer, and fix the compensation of the officers, and the term of the same, not to exceed however two years.

33 5. To make regulations concerning the subscription for and transfer of stock, fix upon the amount of capital to be invested in the corporate business, the division of the same into shares, the time required for the payment thereof by the subscriber for stock and the amount to be called for at any one time, on the non payment of which after notice a right of action shall accure to the Corporation against the stockholder in default. The first Board of Directors shall be the Corporators applying for and obtaining the Charter, and thereafter the Board shall consist of five or more members at the option of the Corporation to be elected by a majority of the votes cast by the stockholders either in person or by proxy, each share representing one vote. A majority of the Board of Directors shall constitute a quorum and shall fill all vacancies till the next election. The Board of Directors shall keep a full and true record of all their proceedings, and an annual statement of receipts and disbursements shall be copied on the minutes which shall be subject at all times to the inspection of any stockholder. And the books of the Corporation shall show the original and subsequent stockholders their respective interests, the amount which has been paid on the shares subscribed, the transfer of stock by and to whom made, and such other transactions as the stockholders or creditors may be presumed to have an interest to know. The amount of unpaid stock due from a subscriber to the corporation shall be a fund for the payment of any debts due from the corporation. And the transfer of stock by a subscriber shall not relieve him from liability on his subscription till the full amount thereof has been paid. The Corporation shall have the right and power to borrow money, and issue note or bonds upon the faith of the corporate property. And also to execute a mortgage or mortgages as further security for repayment of money thus borrowed. The business of said Company shall be to establish and construct water works in or near the City of Knoxville, Tennessee, and it shall be the duty of said Company to build, furnish and equip water works of sufficient capacity to fur-

34 nish the corporate authorities and inhabitants of said City with water. To enable the Company to establish such works it is hereby authorized and empowered to lay down pipes through the streets, lanes and alleys of said City in such manner as to produce th- least possible inconvenience to the City or its inhabitants or to travelers. And to take up pavements ane sidewalks, provided they

shall repair the same with the least possible delay. The Company shall have powers, and are hereby authorized to bring into said City a sufficient supply of water by means of pipes or tanks or in any other way, and to construct reservoirs for the reception thereof. And to supply with water the inhabitants of said city, and the environs thereof, and all who may be along the line of the comoany, pipes, and of erecting hydrants and fire plugs within said city, and to contract with said inhabitants, and with the corporate authorities of said City, or any incorporated Compamies for the use of said water, and charge such price for the same as may be agreed upon between said Company and said parties. And consumers shall be subject to all such reasonable rules and regulations respecting the use and waste of said water as the directors of the Company may from time to time prescribe. The works and operations of said Company shall be to construct and managed that no annoyance shall accrue therefrom to the health and comfort of the inhabitants of the City, and nothing in the Charter shall be so construed as to absolve the Company, its officers and agents from any legal proceedings to restrain or abate any nuisance arising from such water works or operations. If any person or persons shall injure or destroy any portion of the water pipes or other property of said Company, or shall willfully open a communication into the street or into other water pipes, or let on water after it has been stopped be the Company such person or persons shall be liable for all damages sustained by such proceedings. And also to penalty not exceeding five hundred dollars upon conviction before a Court having jurisdiction of the offense.

35 If any person or persons shall take or use any water of said Company for domestic or other purposes without having previously contracted for the same with the officers of said Company, such person or persons shall forfeit and pay to the said Company the sum of fifty dollars to be recovered before any Justice of the Peace in the same manner as other debts are collected by law. Provided that nothing herein contained shall be construed to compel the inhabitants of said City to use the water so introduced by said Company or to prevent them from using water obtained in any other way. And if any person or persons shall willfully corrupt or permit anything to run into or to fall into any stream or reservoir from which the Company shall take water to be introduced into said City which shall corrupt the same or render it unpalatable, unwholesome, or unfit for domectic or manufacturing use or for the supply of stationery or locomative engines or shall bathe in any dam or reservoir, lead or enter any animal into the same he shall on conviction thereof before any Justice of the Peace of the Civil District in which said water is situated pay a fine of not less than ten or more than fifty dollars, one half to the use of the informant, and the other half to the yse of said Company, and shall moreover remain liable to said Company for all damages.

A failure to elect officers at the proper time shall not dis-olve the Corporation, but those in office shall hold until the election or appointment and qualification of their successors. By no implication

or construction shall the corporation be deemed to possess any powers except those hereby expressly given or necessarily implied from the nature of the business for which the Charter is granted, and by no interference whatever shall said corporation possess the power to discount notes or bills, deal in gold or silver coin, issue any evidence of debts as currency, buy and sell any agricultural products, deal in merchandise, or engage in any business outside the purpose of the Charter. The right is reserved to repeal, annul or
36 modify this Charter. If it is repealed or if the amendment proposed being not merely auxiliary, but fundemental are rejected by a vote representing more than half the stock the corporation shall continue to exist for the purpose of winding up its affairs, but not to enter upon any new business.

If the amendments or modifications being fundamental are accepted by the Corporation as af-said, in any general meeting to be called for that purpose any minor, married woman or other person under disability or any stockholder not agreeing to the acceptance of the modification shall cease to be a stockholder, and the Corporation shall be liable to pay said withdrawing stockholders the par value of their stock if it is worth so much, if not, then so much as may be its real value in the market on the day of the withdrawal of said stockholder, as aforesaid, provided that the claims of all creditors are to be paid in preference to said withdrawing stockholders.

We, the undersigned, apply to the state of Tennessee, by virtue of the laws of the land for a charter of incorporation for the purposes, and with the powers declared in the foregoing instrument.

Witness our hands the 27th day of Dedember 1881.

PETER STAUB.
JNO. M. BROOKS.
F. M. LAWREE.
JOS. T. McTEER.
HECTOR COFFIN.
ALVIN BARTOR.
H. H. INGERSOLL.

STATE OF TENNESSEE, *City of Knoxville:*

I hereby certify that leave to operate under the foregoing charter of incorporation has been duly obbained from the corporate authorities of said City.

Witness my hand — seal of office, this — day of —— 188-.

STATE OF TENNESSEE, *Knov County:*

Personally appeared before me, J. F. J. Lewis, clerk of the County Court of said county, Peter Staub, Jno. M. Brooks, F. M. Lawree, Jos. T. McTeer, Hector Coffin, Alvin Barton, and H. H. Ingersoll, the within named bargainors, with whom I am personally acqua-nted and who acknowledged that they executed the within instruments for the purposes therein contained.

Witness my hand and official seal at office in Knoxville, Tennessee, this 27 day of December 1881,

J. F. J. LEWIS, *Clerk.*

[Seal of County Court of Knoxville County, Tenn.]

Received for Record Dec 27 1881 at 11 o'clock A. M., recorded Dec. 28 1881.

JNO. J. MARTIN,
Dep. Reg.

I, David A. Nunn, Secretary of State of the State of Tennessee do certify that the foregoing instrument, with certificate of acknowledgment of probate and Registration, was filed in my office for registration on the 4th day of Jan'y, 1882, and Recorded on the 4th day of Jan'y, 1882, in Corporation Record Book G, in said office page 34.

In testimony whereof, I have hereunto subscribed my official signiture; and by order of the Governor, affixed the Great Seal of the state of Tennessee, at the Department in the city of Nashville, this the 4th day of Jan'y, A. D. 1882.

[1796. Commerce. Great Seal of State of Tenn. XVI. Agriculture.]

D. A. NUNN,
Secretary of State.

REGISTER'S OFFICE,
KNOX COUNTY, TENN.

I, R. M. Johnson, Register of said County, do certify that the foregoing is a full, true and perfect copy of the charter from the State of Tennessee to Knoxville Water Co.; as the same appears of record in this office, in Book 32, page 495, *et seq.*

Witness my hand at office in Knoxville, this 29th day of Nov. 1901.

By R. M. JOHNSON,
Register.

37 (Endorsements:) (3.) No. 1260. Knoxville Water Co., *vs.* M. & A. of the City of Knoxville. Filed Dec. 7, 1901. J. T. Carter, Deputy Clerk. Exhibit No. 1.

The following is a copy taken from the minutes of the Mayor and Alderman of the City of Knoxville, Tennessee, being the contract for Water Works, as passed by said Board June 30 1882.

KNOXVILLE, TENN., 1882.

Article of Agreement for the Construction of Water Works for the City of Knoxville.

This memoranduum of Agreement made and entered into this 1st. day of July 1882, by and between the Knoxville Water Com-

pany of said City in the State of Tennessee, party of the first part and the Board of Mayor and Alderman of the City of Knoxville, Tennessee, party of the second part, Witnesseth:—

That the said Company in order to supply the said City with water for fire protection, public, sanitary and domestic pur-oses does hereby agree:

First.

1.

That it will erect and establish upon and on the land acquired by said City for that purpose a system of Water Works with Reservoirs and all proper and necessary mains, pipes hydrants, machinery, buildings and other appurt-ances and incidents necessary and
38 sufficient to supply said city with water (to be taken from the Tennessee River at the site purchased by the City for that purpose) for all purposes herein after stipulated, the said works and every part thereof to be of the best standard material and constructed in a proper and good workmanlike manner not inferior to or of less capacity, but in every way as good, ample, substantial and of equal dimenfions as contemplated and required by the specification, schedules, drawings, maps and details, prepaired for the City aforesaid, by one Moses Lane, nor shall any of the mains, pipes, hydrants, buildings, machinery, pumps and othe- appurtenances be of quality inferior to that contemplated by said plans and specifications, schedules, drawings, maps and details, a copy of whish is now on file in the office of the City Engineer of said City, and is hereby referred to, and made part of this agreement.

2.

The reservoir shall be built on the site indicated in the said Moses Lane map and shall have a capacity of Three Millions, Two hundred Thousand Gallons of water, as per specifications of said Moses Lane.

3.

Said Company will erect and establish Seventy Five Hydrants (twenty of which shall have double nozzles with thread cut to suit the Hose connection now in use in the City afore said, the same to be located on the line of the main pipes at the points, and along the curb lines, of the city as indicated by a map of the city drawn by the City Engineer and prepared for water works purposes by Moses Lane, which provides for the placing of sixty three fire hydrants, the remaining twelve hydrants to be placed at such other points along said curb lines as may be determined by the City previous to the laying of the pipes which are to supply the hydrants with water; and said map is hereby also made part of this agreement for the purposes mentioned, And the said Company will erect for the use of said City from time to time, as the City may direct
39 and at such points, as the City may designate, as many additional hydrants as the necessity of the City may require, Provided, however, that any additional hydrants thus erected shall

not be located at a distance exceeding six hundred feet from an existing hydrant or from each other.

4.

And the said Company guarantees that the said Water Works and fixtures throughout shall be of first class material, as hereinbefore stated, and capable of supplying Two Million Gallons of water every twenty-four hours, and shall afford an uninterrupted daily supply to said City of such quantity thereof, as shall be required (not exceeding the amoun- above specified, except in cases of unavoidable accident or injury to the works of the Company which shall be repaired in the shortest practicable time.

5.

Said Company will furnish free of charge (except the rental of hydrants, as herein stipulated from said hydrants, for the springling of streets, and flushing of gutters and sewers along, on and under such streets of said City as are or may be curbed, guttered or sewered provided that in flushing not more than two of said hydrants shall be opened and used therefor at one time, also said Company will furnish free through said hydrants water for all purposes of the Fire Department, and for supplying the City Hall Building an*f* Officers and Prisons therein.

6.

Said Company hereby agrees to purchase from said City the property already acquired by the City for the purpose of erecting Water Works, including lands, plans, specifications drawings, maps etc., etc., and to pay therefor within thirty days from the execution of this Agreement and before commencing the construction of said Works, the sum of Seven Thousand Eight Hundred Dollars.

7.

Said Company will supply private consumers with water at a rate not to exceed Five Cents per One hundred gallons *provided,* however, which is expressly understood, that the entire cost of introducing from the mains into private premices, including cost of meter when used, shall be borne by the parties introducing or ordering the same, and that no main or distributing pipe shall be tapped by any person except a plumber licen-ed for that purpose by said Company.

8.

The work of construction shall be commenced within thirty days from the execution of this agreement, and shall be pushed forward to completion with all reasonable expedition so as to be in operation and prepared to supply to the City water in the quantity hereinbefore stipulated, within twelve months after the time specified for commencing work provided, however, that if the Company shall at any time during said period of twelve months be delayed from working or restrained therein, by injunction or other legal process or order sued out or obtained by the City or any of its citizens or by any ordi-

nance of said city, the time during which the Company may be so delayed or restrained shall not be included or reckoned in computing said period, above fixed for completing said works.

9.

Said company will at its own expense, repair replace and restore all streets, lanes, alleys, ways and sidewalks in through, or under which it may lay its mains, pipes and other appurtenances necessary for the erection and maintenance of the works with all convenient and reasonable expedition and as fully and completely as before excavation, provided that when any part of any street lane, alley way or sidewalk is used for making excavation or such other work is done thereon as is necessary for the erection and maintenance of said Water Works, it shall be done in such manner as to give the least inconvenience to the inhabitants of the City. And said Company further binds itself to observe all precautions necessary for preventing accidents whether the same are prescribed by ordinance or
41 not. And the said Water Company covenants to indemnify and save harmless the said party of the second part against all damages which may be adjudged against said party of the second part for any injuries to person or property occur-ing through the negligence or want of due care and precaution of the Company in opening, keeping open, lighting or closing excavations or placing or removing obstructions in or upon the streets of the City of Knoxville. *Provided*, That the said party of the second part shall in all cases make diligent and proper defense to any suits that may be brought against the City for injuries occur-ing as aforesaid, from the negligence of said Company, and shall not compromise or submit to arbitration any such suit or cause without the express consent of said Company.

10.

Said Company will maintain the Water Works herein stipulated to be built in such condition as may be sufficient and necessary to enable it to comply with its undertakings herein set forth for the period of Thirty Years from Jany. 1st 1883, unless the City shall become the owner of the same within that period as may be done in the manne*V* hereinafter stipulated.

11.

And the said Company hereby agrees forthwith to take steps to so amend its Charter, and with in one month to so amend the same as to prohibit it, from issuing bonds in excess of one hundred and Twenty Five Thousand Dollars, for the period of Five years from the execution of this Agreement and after that time from issuing additional bonds in excess of Twenty Five Thousand Dollars, and it is agreed that the indebtedness of the Company by bond shall not exceed the amount of One Hundred and Fifty Thousand Dollars, only One Hundred and Twenty Five Thousand of which can be spent within the said period of five years.

12.

And the said Water Company will at its own proper expense construct and establish in connection with the water works a system of telegraphic fire alarms of such quality and efficiency as that in
42 general use in Cities, consisting of two alarm boxes in each of the present eight Wards of the City located at such points as the City shall designate with proper telegraphic connection with the central station which the Company will establish at the City Hall, The Central Station having proper telegraphic communication with the pump works of the Company so that the additional quantity of water required may be supplied by the Engine, the main leading to the site of the fire, and the Central Station may be properly connected with the Engine House of the City.

Second.

And the said City in consideration of the premises on its part covenants and agrees:—

1st. To grant and guarantee to said Company all right to enter upon any and all streets, squares, lanes, and alleys under the control of the authorities of said City for the purpose of laying pipes mains etc., and making repairs of said works, to take up pavements and side walks on the same and to make such excavation, as may be convenient or advantageous and necessary for the purpose aforesaid, and the right and privilege to lay pipes etc. on, across or through bridges and culverts of the City for conducting and distributing water for public and private uses *provided*, however that the Company shall perform their agreement as set out in Section Nine, hereinbefore written and the City does also further grant the right of way through all public grounds and places controlled by it to the contractor free od cost, so far as the same may be necessary or advantageous for the erection, construction or maintenances of the said Water Works.

2nd. The City further obligates itself not to grant to any other person or corporation any contract or privilege to furnish water to the City of Knoxville or the privilege of erecting upon the public Streets, Lanes or Alleys, or other public grounds for the purpose of furnishing said City or the inhabitants thereof with water for
43 the full period of Thirty Years from the 1st. August A. D. 1883, provided, the Company comply with the requirements and obligations imposed and assumed by them under and by virtue of this agreement.

3rd. The City further covenants and agrees to pay to said Company for rent of the Seventy Five hydrants hereinbefore stipulated to be erected Fifty Dollars each per annum payable in quarterly installments on the last day of each quarter, beginning on the day upon which the City shall commence receiving a supply of water from said Works, and for any additional hydrants erected for the use of the City it will pay in the same manner at the rate of not more than fifty dollars each per annum.

4th. The City will by ordinance give to said Company such protection against injury whether by negligence or unwarranted or

malicious interference or interruption of any kind, as the Legislative Department of the City may lawfully do under its charter and the laws of the land.

5th. And upon payment by said Company of said sum of Seven Thousand, Eight Hundred Dollars, as provided herein before in Section Six, Said City binds itself to execute to the Company a proper deed with cov-nents of seizure, freedom from incumbrances, fu-ther assurances and general warranty, to all property conveyed to the City for Water Works purposes by the following persons, to-wit;— First by Catherine and Mary Shetterly, by deed dated Sept. 16, 1879, Registered in Book T. Vol. 3rd, page 50, Register's Office of Knox County, Tennessee. Second by W. A. Henderson and Peter Staub by deed dated Sept. 8, 1879 registered in same Book page 52. Third by S. T. Atkin by deed dated Sept. 8, 1879, Registered in same book page 53. Fourth by A. S. Prosser and others by deed dated, Sept. 15th, 1879. Registered in same book page 48. Fifth, by H. W. Hall, by deed dated Sept. 8, 1879, and registered in same book page 54, and also all rights of way for the use of water works which may have been secured by the city therefor during the year 1879.

44 6th. And the said Board of Mayor and Aldermen in view of the benefit and advantage accur-ing *th* the City and its citizens from the construction of said Works and the erection of said hydrants, cov-nants and agrees with the said Water Company to pay in addition to the annual rent of Fifty Dollars as hereinbefore provided, and as an additional annual rent for the said Seventy five hydrants, a sum equal to that which under the laws of the State and the ordinances and resolutions of the City would be annually assessed as taxes for City purposes and uses on property of the same kind, quantity and value as that owned by the said Water Company within the Corporate limits of the City of Knoxville, Provided, that the said additional annual rent shall only be paid for the term of five years next following 1st August 1884, and no longer.

Third.

1st. And it is hereby mutually agreed and understood that at the expiration of Fifteen years from the time hereinbefore fixed for the completion of said Water Works, the City shall have the right upon giving one year's notice of such purpose and intention to purchase fron said Company, the Water Works herein provided for and all the property rights, franchises and privileges thereto belonging by negotiations if thus the terms can be agreed upon, or if not, then at any time for a consideration to be fixed and determined by Appraisers, and if not purchased at the end of fifteen years, the said works, property and franchises rights, privileges etc., may upon the same terms and conditions and in the same way be purchased by the City at the expiration of each and every year thereafter. But in no case shall such right *at* purchase exist, or be exercised unless due notice thereof be given by the City to the Company one year before the ex-

45 piration of the period aforesaid, or either of them. And in the event of such notice and the failure of the parties hereto to agree upon the terms and condition of sale the price to be paid,

and other matters necessary to close the sale, then, in that event, each party shall choose two disinterested persons, non-residents of said City, and also of the County of Knox in the State of Tennessee, and the four thus chosen shall select a fifth person likewise disinterested and a non-resident of Knox County, and said five person- thus chosen shall constitute a Board of Appraisers, and having accepted their appointment shall each take and subscribe an oath to act fairly, honestly and impartially in the premises, and having so done shall proceed to value and appraise the water works aforesaid, and all the rights, privileges, franchises, easements and other property appurtenant to said water works, belonging to said Company, and also to ascertain, determine and declare the amount of indebtedness of said Company, or of which its successors or assigns would become liable, and in view of such indebtedness shall decide, determine and award the net value of said Water works, and all other property of said Company appurtenant thereto aforesaid.

And such award of said Board of Appraisres or that of a majority thereof shall be final and conclusive upon the parties.

And when the purchase price so fixed and determined shall be paid to said Company by the City, then said Company shall and will forthwith by proper deeds of conveyance assign, transfer, set over and convey to said City of Knoxville, said Water Works, and all the rights, franchises, easements, privileges and other property appurtenant thereto owned by said Company at the date of such appraisal and award.

2nd. And it is further understood and agreed by *by* and
46 between the said par*B*ies that the said Knoxville Water Company shall not transfer, set over, or assign the contract hereinbefore made for the construction of Water Works, to any Company, Corporation or individual whatever. Provided that nothing herein contained shall be construed as prohibiting or restraining the said Knoxville Water Company from mortgaging or conveying in trust the lands, easements, estate rights, privileges and franchises herein granted and agreed and contracted to be granted for the purpose of securing the bonded indebtedness of said Company (subject as to the amount to the provisions hereinbefore stated) or as prohibiting or *er*straining said Water Company from sub-letting, or agreeing with sub-contractor for the construction of any portion of the said Water Works, or agreeing with any person or Corporation for furnishing *furnishing* materials or apparatus therefor.

3rd. And it is further mutually understood and agreed by and between the Company and the City that a penalty bond this day executed by the Knoxville Water Company as principal and Sam McKinney as surety to the Board of Mayor and Alder*man* of the City of Knoxville, conditioned in the sum of TwentyFive Thousand Dollars for the construction at and within the limits of the City of Knoxville a system of Water Works, in accord*i*ance with the plans and specification- of Moses Lane, or in case of failure to pay, satisfy and discharge all such damages, as said Board may sustain in consequence of said failure is hereby referred to and made part of this Agreement.

4th. And it is fu-ther mutually understood and agreed by and between the said Company and the City, That Article one of Section one of this Agreement be amended so as to require that the system of Water Works hereinbefore provided for shall be built and constructed in accordance with the plans, specifications and drawings — Moses Lane, with a single exception, That is to say; Instead and in place of the stand pipe for fire purposes, at the Reservoir as required and contemplated by the plan and specifications of Moses Lane, and said Company shall construct and establish at the
47 Reservoir a system of By-pass pipes by means of which the water in case of fire may be directed into the proper mains by the direct pressure of the Engine and Works.

In testimony whereof the said Knoxville Water Company has caused this agreement to be signed on its behalf by its President and Secretary, and the said Board of Mayor and Alderman of the City of Knoxville has caused this agreement to be signed on its behalf by the Mayor and Recordre of the City of Knoxville and has affixed hereto its common seal on the day and year above written.

[Seal of Mayor and Alderman of the City of Knoxville.]

(Signed)

S. E. COOK,
President Knox. Water Co.
ALVIN BARTON,
Sec'y Pro Tem.
R. S. PAYNE, *Mayor.*
C. C. NELSON, *Recorder.*

KNOXVILLE, TENNESSEE, —— —, 1882.

Bond of Knoxville Water Company. Filed July 1, 1882.

Know all men by these presents, That we, the Knoxville Water Company, a body politic and corporate, as principal and Samuel McKinney a resident of Knoxville, Tennessee as surety are firmly bound and held unto the Board of Mayor and Alderman of the City of Knoxville, in the penal sum of Twenty Five Thousand Dollars.

Now the condition of this bond is such that if the said Knoxville Water Company shall within the period of twelve months from July 1, 1882, construct, erect, and establish at and within the corporate limits of the City of Knoxville, Tennessee, a system of Water Works in accordance with the plans and specifications of Moses Lane, or in case of failure therein, shall pay satisfy and discharge all such damages, as the said Board of Mayor and Alderman
48 as a corporation, shall incur or sustain, in consequence of such failure, then, and in that event, this obligation shall be null and void, otherwise to remain in full force.

In testimony whereof the said Knoxville Water Company has caused the signature of its President and Secretary to be hereunto

affixed on its behalf, and the said Sam McKinney has hereunto set his hand this July 1st, 1882,

(Signed) S. E. COOKE,
President Knoxville Water Co.
A. BARTON,
Sec'y Pro Tem of Knoxville Water Company.
SAM McKINNEY, Sec't'y.

Filed July 1st, 1882.

RECORDER'S OFFICE,
CITY OF KNOXVILLE, TENNESSEE, *November* 19, *A. D.* 1901.

I, C. C. Nelson, Recorder of said City, do hereby certify the foregoing to be a full true and perfect copy of the contract it purports to give between the Knoxville Water Company and the City as the same appears of Record now in my office on the minutes of the M. & A. of said City.

I further certify that I am the custodian of the books and papers of said city.

Given under my hand and the seal of said City the date above written.

C. C. NELSON,
Recorder & Treasurer of the City of Knoxville, Tennessee.

N 1260. Knoxville Water Co, *vs.* M. & A. of the City of Knoxville, Filed Dec. 7th, 1901. Jas. T. Carter, Dep'ty Clerk.

49 At the regular meeting of the Mayor and Aldreman of North Knoxville held Saturday April 18th, 1891, amongst other proceedings of said Board an ordinance was passed on ots last reading and became a law, in words following:

(See Minutes 358 to 367 inclusive.)

Ordinance.

An Ordinance to Provide for a Supply of Water to the Town of North Knoxville and its Inhabitants, and to Authorize the making of a Contract for the Same, with Wheeler and Parks.

SECTION 1ST. Be it ordained by the town council of North Knoxville, That in consideration of the public benefit to be derived therefrom, the right and privilege is hereby granted, until June 3rd, 1913, unto Wheeler and Parks of Boston in the commonwealth of Massachusetts, their successors and assigns, (they being hereinafter designated as grantees) of erecting and maintaining and operating a system of water works, and to extend the ma-ns, and to enlarge the plant at their pleasure, in accordance with the terms and provisions of this ordinance, and of using the avenues, and all public grounds within the corporate limits of the town of North Knoxville as they now exist, or may hereafter be extended or created, for the

purpose of laying pipes, mains and other conduits and erecting hydrants and other apparatus for conducting and furnishing an adequate supply of good, clear and wholesome, water, suit-
50 able for domestic and manufacturing purposes, to the town of North Knoxville and its inhabitants for public and private uses subject to all reasonable requirements of the Town Council of North Knoxville: and for making repairs to said system from time to time during the period in which this ordinance and contract hereinafter authorized are in force.

The privileges herein granted, so far as they relate to furnishing water for hydrant service, to be exclusive so long as the total number of hydrants rented hereunder does not exceed fifty (50).

SECTION 2ND. Be it further ordained that the said grantees shall exercise the greatest care and diligence in the use of said avenues, streets, alleys bridges and public places and shall cause no unnecessary obstructions of or interruption to, the public travel over or upon the same, or any permanent injury to, or interference with any pipes, mains or sewers, which may be lawfully located beneath the surface thereof, now, or at the time any of the extensions herein provided for are made. Said grantees shall take every precaution to provide against injury to any person or property by reason of the exercise of the rights and privileges hereby granted, and shall cause all excavations and obstructions to be properly lighted at night, and take all necessary precaution for the prevention of accidents, whether prescribed by ordinance or not, and shall restore all avenue- streets, alleys and public places, when worked or used, to their
51 former condition as near as may be without unnecessary delay, and at the least inconvenience to the inhabitants of the Town of North Knoxville: and the said grantees shall idemnify and save the town harmless from any and all damages that may be recovered against it by reason of their negligence while engaged in constructing or repairing said works within the corporate limits of said town of North Knoxville or by reason of any defect therein.

SECTION 3RD. The water to be supplied under the contract hereby authorized, shall be from the Tennessee River, or from other sources equally suitable and shall be supplied from the same system that supplies the City of Knoxville, or otherwise as said grantees shall elect (and said grantees shall adopt, within two years from the time the contract takes effect, all necessary and proper means of filtering, or otherwise clarifying the same, so as to render it pure and wholesome) and it is hereby stipulated that the water to be supplied hereunder shall be taken from a point above Williams Creek, whenever the city of Knoxville shall be so supplied.

SECTION 4TH. The Pipe to be laid hereunder shall range from four (4) inches to twelve (12) inches interior diameter, or larger. Not more than one hydrant shall be set upon any Section of (4) inch pipe, in which case said section shall be supplied at each end through larger pipes, and all pipes shall be of ample size, and so arrange- as to furnish a full supply of water under the minimum pres-
52 sure, and to meet the tests herein provided. All pipe to be of cast iron and tested at the foundry to a pressure of three hun-

dred pounds (300) to the square inch, and thoroughly coated in accordance with the most approved method employed in modern practice in the coating of water pipes.

SECTION 5. The valves shall be located at each point as will admit of not over three blocks being isolated from the balance of the system in case of needed repairs or extensions,

SECTION 6. The hydrants shall be frostproof, double nozzle of most approved pattern, with hose tips fitted to connect with such hose couplings as the town council of North Knoxville may adopt.

SECTION 7. The grantees will lay main and wherever, and to such extent, as may be required by order of the Town Council of North Knoxville, be the same more or less, and will set thereon fire hydrants of approved patterns at the rate of one hydrant for each six hundred feet of pipe so ordered and laid: said hydrants to be located at such point on said pipe as said Town may elect: and said grantees will supply the same with water free of charge (for the purpose recited in Section 13) until June 1st, 1892, and thereafter until said Company shall have clarified by filtration, precipitation or otherwise, the water to be supplied hereunder. Thereafter the rate to be paid by said Town of North Knoxville for the use of said hydrants shall be Forty Five ($45.00) Dollars each, per annum, payable quarterly, but shall not at any other time exceed the rate paid by the
53 City of Knoxville, for hydrant service, upon the extension made within the limits of the said City of Knoxville.

SECTION 8TH. And the said grantees further agrees to improve the work and increase the plant from time to time to any extent which may be needful to enable them to furnish an ample supply of good potable water as provided in Section 3, for public and manufacturing, and domestic use for the entire District of North Knoxville which supply shall not be less than fifty (50) gallons per head per day, if requi-ed for the entire population, including any increase thereof, it being provided that there shall be no unnecessary waste: and to furnish each and every suburb in the vicinity of North Knoxville with water upon no less favorable terms than shall from time to time govern its use in the City of Knoxville,

SECTION 9TH. The Waters to be furnished private consumers shall be charged for at not exceeding the rates contained in the following schedule:

Tariff of Water Rates.

Annual Rates.

Private dwellings occupied by one family:		
Four rooms or less	6.00	
Five "	7.00	
Six " more	8.00	and upwards
Bath tubs, private	5.00	
public	10.00	
Water closets—private	5.00	
public	10.00	

Urinals—private	5.00
public	10.00
Stores—According to occupation and use	8.00 and upwards
Rooms over stores according to occupant.	
54 Offices in buildings where water is generally used	8.00 and up.
Banks	8.00
Insurance offices	8.00
Saloons	Special.
Photograph Galleries	$15.00 to 50
Dentist's office	10.00 to 20
Hotels and Boarding houses:	
Hotels and Boarding houses	Special or meter rates.
Stables—Livery and sales stables—(hose privileges extra) per stall	2.00
Private stables per stall	2.00
Bakeries—per each barrel of flour used daily	5.00
Printing offices, exclusive of engine	10.00 to 25.00
Steam Engines per horse power	2.50
Rest-urants	25. to 100.00
Barber shops—first chair	5.00
Each additional chair	2.00
Fountains—Six hours per day for seven (7) months:	
1/16 inch jet	5.00
1/8 " "	8.00
3/16 " "	12.00
5/16 " "	45.00
Building purposes: Laying bricks per thousand	.10
" stone per cu. yard	.04
Plastering per 100 square yards	.35

Sprinklers and Street washers, from April 1st to November, governed by number of lined feet front including privilege of washing windows and side walks and sprinkling lawn and streets in front of your own premises:

Dwelling with lawn, & as above, for each 50 ft. front for season	8.00
No contract made for less then one year.	
Business houses, for each 25 feet front for the season	8.00

Meter Rates.

For Manufacturing and Mechanical Purposes.

0 to 200 M. Gallons monthly at	10 cents per M.
200 to 300 " " "	9 " "
Above 300	8 " "

For all other purposes not otherwise provided for, the rate will not exceed twenty five (25) cents per thousand gallons subject to the following discounts:—

On quarterly bills of	$10.00	to $25.00	discount 5 per cent.
	25.00	50.00	10
	50.	75.	15
	75.	100.	20
On quarterly bills of	100	to $125	discount 25 per cent.
	125	150	30
	150	175	35
	175	200	40
	200	250	45
	Exceeding	250	50

Provided that the minimum meter charge shall not be less than $10 per annum.

55 Making Connections:

For making connections for private supply the following charge shall be made:

½ inch pipe galvanized iron	$8.00
¾ " "	10.00
1	14.00

For lead pipes special rates will be given at the time according to the market price.

Black iron gas pipe is not allowed,

SECTION 10TH. The grantees further agree that they will, within a reasonable time not exceeding three (3) years after the granting and acceptance of this ordinance, provide a high service system, and hereby agree that said system shall be capable of furnishing five (5) streams of water from the *the* fire hydrant, th-ough two hundred (200) feet of hose and one (1) inch nozzle, thrown simultaneously to an average vertical height of not less than forty (40) feet, Said streams to be taken from the five highest hydrants in the town of North Knoxville: (and they further agree that for all hydrants set under the provisions of this ordinance that do not indicate a pressure of twenty five (25) pounds or more per square inch, as indicated by a pressure gauge they will make no charge for rental for said hydrants until said high service shall have been established.

SECTION 11. The said grantees further agree that within thirty (30) days *agter* the *-won* Council has ordered and located the first installment of hydrants hereunder and shall have notified said grantees in writing to that effect, they will place an order for
56 pipe, hydrants, etc., with reliable foundried and manufacturies: and immediately upon the delivery of such pipes hydrants &c., will proceed to lay and supply the same with water, and wil- complete the same within ninety days (90) after said pipes &c. shall have been received: and will thereupon furnish water through the same to said town of North Knoxville, it being provided

that said pipes shall be laid and water shall be furnished within six (6) months after first installment of hydrants shall have been ordered. In the event of their failure to perform the agreements provided in this Section, said grantees will forfeit to the Town of North Knoxville th- sum of One Thousand Dollars. ($1000.00) as liquidated damages.

SECTION 12TH. In consideration of the benefits to accrue to it and its citizens the Town of North Knoxville agrees to, and hereby rents from the said grantees the fire hydrants above mentioned, until June 3rd. 1913, at an annual rental of forty-five ($45) Dollars per hydrant, payable quarterly on the first days of Jan'y, April, July, and October, Subject to the final provisions of Section 7.

SECTION 13TH. Said grantees shall extend the mains of or lines of pipe whenever requested by North Knoxville, and North Knoxville will rent an additional hydrant for every six hundred (600) feet thereof, at forty-five ($45) Dollars per year, payable quarterly, subject to the conditions of Section 7: and water may be used from said hydrants for the extinguishment of fires, and for fire protection for necessary practice and drill of fire Companies and for flushing and washing all gutters and sewres, now and hereafter built
57 without payment other than the forty five (45) Dollars per hydrant hereinbefore fixed: but in flushing gutters and sewers, not more than one hydrant shall be opened at one time: and said use shall be limited in all cases to one hour per week for each mile of main laid within the limits of said Town of North Knoxville; and in no case shall flushing be done during a fire in Knoxville, or any of its suburbs.

SECTION 14. The grantees shall supply water, not exceeding 5000 gallons per day, for one ornimental fountain at such point as the Town Council may designate: and also water for one public watering trough for man and beast; the cost of their erection to be paid by North Knoxville: and shall also furnish water for two public school buildings, and for the use of the City Hall: and for the water to be so furnished North Knoxville will pay as rental a sum equivalent to the taxes assessed by it against said grantees for the first five years: said rental to be due and payable on the same date taxes may be due: and after the expiration of five years (5) as herein provided, said grantees shall continue to furnish water as herein provided free of charge, and pay the taxes properly assessed against them,

Said grantees shall furnish water free of cost to each of the Churches in said Town of North Knoxville, the same to pass through self closing fixtures: the expense of which together with all pipe and connections, and the work of inserting the same, to be borne by said Churches respectively.

SECTION 15TH. That North Knoxville will enact all
58 needful and requisite ordinances within its power to do so, to protect the works and property of said grantees from damage, fraud or imposition.

That any person or persons, or corporation which shall take or use any water from the works of said grantees for domestic use, or

other purposes without contracting for the same *and* upon conviction shall be fined not less than ($5.) dollars nor more than fifty ($50.00) dollars.

The said grantees shall have the right to shut off the water temporarily from the mains, or any portion thereof, for the purpose of making repairs, or extentions to the works, provided notice is given of the intention to cut off the water, and such repairs and extentions are made without delay, and with due diligence, but if at any time the *the* water is shut off from any cause for more than five days at a time the rental of hydrants shall cease during the time of suspension, and no citizen who is cut off shall be liable to pay for like time.

SECTION 16TH. In the event of the construction of a system of sewers by the Town of North Knoxville as it is now, or maybe hereafter extended, said grantees will furnish, free of charge the necessary water to flush sewers by means of a proper, efficient and well regulated system of flushing tanks, or any other well regulated and economical method; to be constructed by the town.

59 SECTION 17TH. The authorities of the town to whom said duty pertains under the Ordinances of the said town of North Knoxville, shall have the right to inspect the fire hydrants at any time; and in case it shall be ascertained by such inspection, that any of the hydrants are out of repair, or otherwise inefficient for the purposes for which they are erected, the town shall have the right *ot* order the hydrant to be repaired, and shall at once notify the grantees, designating the defect, and if within two (2) days from the receipt of such notice the said grantees do not attend to such repairs, the Town may have the same repaired at its own expense, and may deduct from the rental due from it to the grantees the cost of such necessary repairs.

SECTION 18TH. In case of accident to the works of said grantees, the works shall be repaired as speedily as possible, and in case it shall fail to supply water for three (3) months at any time, it shall forfeit six (6) months hydrants rental of all hydrants not supplied. It being provided that the works to be constructed hereunder are to be in accordance with the most approved practice of modern art, and pipes, hydrants, *a* valves, &c. are to be of standard make, and subjected to the most approved tests before being used in the works, and the grantees shall maintain the water works in such manner as to enable them to comply with the terms of this contract during the entire period thereof.

SECTION 19TH. Be it further ordained that within fifteen
60 (15) days after this ordinance takes effect the grantees shall file their written acceptance of the same in the office of the Recorder of North Knoxville, and upon this being done, this ordinance shall become the contract between the Town of North Knoxville, and the said grantees, their successors or assigns, the same and as fully as if its provisions were embodied in a formal written contract, made and executed between the parties. And the said grantee shall within said last named fifteen days file with the Recorder a good and solvent bond in the sum of Five Thousand

($5,000.00) Dollars, properly conditioned for the faithful performance of the contract herein contained, and also containing a clause, or condition providing that if said grantee shall fail to perform their agreements as contained in Section 11, of this ordi-nnce within the time therein specified, said grantee shall forfeit to the Town of North Knoxville the sum of One Thousand ($1,000.00) Dollars, as liquidated damages for such failure, and they shall be also liable for damage that may accrue from any other breach of the contract herein contained.

In case of failure or neglect on the part of the grantee to furnish an adequate supply of good, clear and wholesome water for private and public uses during a period of six (6) months after official notice shall have been given by said Town of North Knoxville,
61 except as provided in Section 3. then all rights under this ordinance at the election of said Town, shall cease and determine: it being understood and agreed that this shall not apply in any case whrer the failure or neglect to supply any cause beyond the control of said grantees.

SECTION 20TH. Said grantees may assign this contract to any water Company now organized (or to be hereafter organized) under the laws of the State of Tennessee, and who may become their successors, and said Company, whether now organized or to be hereafter organized, may make a mortgage covering any or all portions of its plant and may issue its bonds thereon. And said grantees or any water Company to whom they may assign this contract, may purchase the franchise and property of any other water Company.

The said grantees may extend their mains, at their pleasure, outside the corporate limits of North Knoxville, and may make contracts with, and supply water to any person or persons, and any private or Municipal corporation from the system herein contracted for. Provided the supply to North Knoxville as herein contracted for shall not be diminished thereby.

SECTION 21ST. It is hereby provided that should the said grantees be prevented from performing any of their agreements as provided for in this contract, including those in Section 11, by any legal or judicial interference, by any strike or accident beyond their
62 control, by any public calamity, or when prevented from so doing by any act of the Town Council of the said Town of North Knoxville they shall not be holden but such additional time shall be granted as shall reasonably cover such interferences.

SECTION 22ND. It is further agreed that in case said grantee shall fail to furnish water as contemplated by this contract in Section 11, for public and private purposes within twelve (12) months from date of ordering the first installment of hydrants as provided in Section 11 then all franchises and privileges herein granted shall become forfeited without further notice; and this contract shall be null and void at the election of North Knoxville, but in declairing the same void the city shall not be deemed to have waived any right of action on the bond executed by said grantees for damages provided by this contract.

SECTION 23RD. And the said grantees hereby agree that they will immediately apply for a charter under the laws of the State of Tennessee authorizing the construction of the system of water works as herein provided, and organizing a company thereunder when the same shall have been granted, to whom this contract shall be assigned. And the said town of North Knoxville hereby agrees to perform all such acts and things as are required of it in such cases under the laws of the State to perfect the Charter.

The grantees may, however, if they should elect not to organize a new corporation, assign this contract as provided in Section 20 hereof.

63 SECTION 24TH. Be it further ordained that all ordinances or parts of ordinances in conflict with this ordinance be and the same are hereby repealed.

SECTION 25TH. Be it further ordained that this ordinance take effect from and after its passage, the welfare of the Corporation demanding it.

STATE OF TENNESSEE, *City of Knoxville:*

I, C. C. Nelson, Recorder and Treasurer of said City, and custodian of the books and papers thereof, do hereby certify the foregoing to be a full, true and perfect copy of the ordinance it purports to give as the same appears of record on the minutes of the Board of M. & A. of North Knoxville (old corporation) now in my office.

Given under my hand and seal of the City at office in the City of Knoxville, November 29, A. D. 1901.

C. C. NELSON,
Recorder & Treasurer of the
City of Knoxville, Tenn.

No. 1260. Knoxville Water Co. *vs.* M. & A. of the City of Knoxville, Tenn. Filed December 7, 1901. J. T. Carter, Deputy Clerk.

64 STATE OF TENNESSEE:

Charter of Incorporation.

Be it known that D. S. McIntyre, H. E. Holmes, Daniel Kelly, William M. Baxter, and H. P. Coil (all of whom are more than twenty-one years of age) are here constituted a body politic and corporate by the name and style of "The Lonsdale Beaumont Water Company" for the purpose of establishing and constructing water works adjacent to and in the Town of West Knoxville, in Knox County, Tennessee. And it shall be the duty of said Company to build Water works and provide machinery in or adjacent said town and of suffucient capacity to supply said town and the inhabitants thereof with a plentiful supply of water and for this purpose said Company is hereby authorized and empowered and invested with

the privilege to lay down pipes and extend acqueducts and conductors through any or all of the streets, lanes alleys of said town and to supply the inhabitants of said town with water by public works and for the purpose of laying down such pipes acqueducts and conductors, said company may take up the pavements or sidewalks upon such streets after permission has been obtained from the corporate authorities of said town, Provided, that said pavements and sidewalks shall be taken up in such manner as to give the least inconvenience to the inhabitants of said town, and that the same shall be replaced with all convenient speed by and at the expense of said Company in as substantial a manner as found before taking up.

The works and operations of said Company shall be so constructed and managed as not to effect the health or comfort of said town prejudicially; and nothing in the Charter shall be so construed as to absolve said Company from legal proceedings to restrain or abate any nuisance arising from its operations.

If any person shall injure or destroy any portion of the fixtures or other works or property belonging to said company or shall wilfully open any communication into the streets or other water pipes or let on water after *after* it has been stopped by the Company, such person or persons shall be liable for all damages sustained by such proceeding, and also a penalty not exceeding Five Hundred ($500.00) Dollars upon conviction before a court having jurisdiction of the offence.

If any person or persons shall tak- or use any of the water of the said Company for domestic or other purposes without having previously contracted for the same with the officers of said Company, such person or persons shall forfeit and pay to said Company the sum of Fifty ($50) Dollars to be recovered before any Justice of the Peace in the same manner as other debts are collected by law; Provided, that nothing herein contained shall be construed to compel the inhabitants of said town to use the water so introduced by said Company or prevent them from using water obtained in any other way.

If any person or persons shall wilfully corrupt or *com*mit anything to run into or fall into any stream or reservoir from which the said Company shall take water to be introduced into said cities or village which shall corrupt the same or render it unpalatable, unwholesome or unfit for domestic or manufacturing purposes or use, or for the supplying of stationary or locomotive engines, or shall bathe in any dam or reservoir, lead or enter any animal into same or being convicted thereof before any Justice of the Peace of the Civil District in which the said water is situated, shall pay a fine of not less than ten ($10.) nor more than fifty ($50.00) dollars, one half to the use of the informer, the other half to the use of
65 said Company and shall moreover remain liable to said Company for all damages.

Said Company is hereby empowered and authorized to condemn and take such lands as may be necessary for the establishment of

their reservoirs and works, and the rights of way through all lands between its reservoirs and the said town to lay its pipes, acqueducts or conductors, and keep the same in repair, is hereby granted said Company: Provided—that such pipes and conductors shall be laid in such a manner as to do as little injury to the property of private persons as possible: And provided further that said Company shall make compensations to the owners of the real estate condemned or taken, or through which the pipes, conductors or acqueducts may be laid. If the owner and said Company cannot agree upon the amount of compensation which shall be paid the same shall be assessed in the manner provided by the Code of Tennessee (1858), Section 1325 to 1348 inclusive.

Said Company is hereby vested with all the powers and privileges, and shall be governed by all the restrictions incorporated in Section 5 of the Acts approved March 23rd, 1895, to wit: the general powers of said said corporation are,

1. To sue and be sued by the corporate name.
2. To have and use a common seal which it may alter at pleasure, if no common seal, then the singing of the name of the corporation, by any duly authorized officer, shall be legal and binding.
3. To purchase and hold by gift, in addition to the personal property owned by said corporation, any real estate necessary for the transaction of the corporate business and also to purchase or accept any real estate in payment or part payment of any debt due to the corporation, and sell realty for corporate purposes.
4. To establish by-laws and make all rules and regulations not inconsistent with the laws and the constitution, deemed expedient for the management of corporate affairs.
5. To appoint such subordinate officers and agents, in addition to the President, Secretary or Treasurer as the business of the corporation may require.
6. To designate the name of the officers and fix the compensation of the officers.
7. To borrow moaney, and issue notes or bonds upon the faith of the corporate property and also to execute a mortgage or mortgages as further security for repayment of money thus borrowed.

The following provisions and instructions are coupled with said grant of powers:

1. A failure to elect officers at the proper time does not dissolve the corporation, but those in office hold until the election, appointment and qualification of their successors.
2. The term of all officers may be fixee by the by-laws of the corporation, the same not, however to exceed two years.
3. The corporation may by the by-laws make regulations conserning the subscription of or transfer of stock; fix upon the amount of capital to be invested in the enterprise; the division of the same into shares; the time required for the payment thereof by the subscribers for stock: the amount to be called at any one time, and in case of failure of any stockholder to pay the amount thus subscribed by him at the time and in the amount thus called a right of action

shall exist in the corporation to sue said defaulteing stockholder for the same.

66 4. The Board of Directors which may consist of five or more members at option of the corporation to be elected either in person or by proxy by a majority of the votes cast, each share representing one vote; shall keep a full and true record of all their proceedings and an annual statement of receipts and disbursements shall be copied on the minutes subject at all times to the inspection of any stockholders.

5. The books of the corporation shall show the original or subsequent stockholders, their respective interests, the amount which has been paid on the shares subscribed, the transfer of stock by and to whom made; also other transactions — which it is presumed a stockholder or creditor may have an interest.

6. The amount of any unpaid stock due from a subscriber to the corporation, shall be a fund for the payment of any debts due from the corporation, nor shall the transfer of stock by any subscriber relcive him from payment unless his transferee has paid up all or any of the balance due on original subscription.

7. By no implication or construction shall the corporation be deemed to possess any powers except those hereby expressly given or necessarily implied from the nature of the business for which the Charter is granted, and by no inference whatever shall said corporation possess the power to discount notes or bills, deal in gold or silver coins, issue any evidence of debt as currency buy or sell any agricultural products, deal in merchandise or engage in any business outside the purpose of the Charter.

8. The right is reserved to repeal, annul or modify this Charter. If it is repealed or if the amendments proposed being not merely auxiliary but fundemental are rejected by a vote representing more than half of the stock; the corporation shall continue to exist for the purpose of winding up its affairs; but not to enter upon any new business.

If the amendments or modifications, being fundamental are accepted by the corporation as aforesaid in a general meeting to be called for that purpose, any minor married woman or person under disability or any stockholder not agreeing to the acceptance of the modifications shall cease to be a stockholder and the corporation shall be liable to pay said withdrawing stockholders the par value of their stock if it is worth so much; if not, then so much as may be its real value in the market on the day of the withdrawal of said stockholder as aforesaid, Provided the claims of all creditors are to be paid in preference to said withdrawing stockholders.

9. A majority of the Board of Directors shall constitute a quorum; and shall fill all vacancies until the next election. The first Board of Directors shall consist of the five or more corporators who shall apply for and obtain the Charter.

10. The said corporators may have right to borrow money monthly and issue notes and bonds upon the faith of the corporate property, and also to execute a mortgage or mortgages for the further security for the repayment of money thus borrowed.

We, the undersigned apply to the said State of Tennessee by virtue of the laws of the land, for the foregoing Charter of incorporation under the Acts of March 23rd, 1875, and its various amendments.

Witness our hand this 1st day of July, 1891.

1. D. S. McINTYRE.
2. H. E. HOLMES.
3. DANIEL KELLEY.
67 4. WM. M. BAXTER.
5. H. P. COIL.

Witness:
E. C. GOTHARD.

STATE OF TENNESSEE, *Knox County:*

Personally appeared before me, W. T. Jones, Deputy Clerk of the County Court of Knox County aforesaid, E. C. Gothard the subscribing witness to the annexed Charter, who, being first sworn, deposed and says that he is acquainted with D. S. McIntyre, H. E. Holmes, Daniel Kelly, Wm. M. Baxter & H. P. Coil, the corporators and that they acknowledge the same in his presence to be their act and deed on the day it bears date.

Witness my hand at office in Knoxville the 20th day of July 1891.

[Seal of the Co. Court, Knox Co., Tennessee.]

W. T. JONES,
Deputy Clerk.

Be it known, That by virtue of the resolution of the corporate authorities of West Knoxville, leave has been had and obtained authorizing the foregoing proposed Water Co. to operate its proposed Water Works within the corporate limits of West Knoxville, and that as directed and empowered by said resolution, I, John W. Yoe, Mayor of said Town of W*set* Knoxville do hereby so certify, and for said Town assent to the foregoing application for the Charter herein applied for by D. S. McIntyre and others this 1st day of July, 1891.

JOHN W. YOE,
Mayor of West Knoxville.

Received for record the 21st day of July, 1891, at 10 o'clock A. M. recorded July 22nd, 1891.

M. A. M. ARMSTRONG, *Register.*

I, Charles A. Miller, Secretary of the State of Tennessee do certify that the foregoing instruments with certificates of acknowledgment of probate and registration *was* filed in my office for registration on the 28th day of July, 1891, and recorded on the 28th day of July, 1891, in corporation record Book P. P. in said office Page 151.

68 In testimony whereof I have hereunto subscribed my

[Here the Great Seal of the State of Tennessee.]

official signature and by order of the Governor affixed the great seal of the State of Tennessee, at the department in the city of Nashville, this 28th day of July, A. D. 1891.

A. MILLER,
Secretary of State.

This certificate together with the Great Seal of the State of Tennessee was received for record the 29th day of July 1891 at 9 o'clock A. M. and recorded same day.

M. A. M. ARMSTRONG, *Register.*

REGISTER'S OFFICE, *Knox Co., Tenn:*

I, R. M. Johnson, Register of said County, do certify that the foregoing is a full true and perfect copy of the Charter from State of Tennessee to Lonsdale Beaumont Water Co., as the same appears of record in this office in Book 110, page 343.

Witness my hand at office in Knoxville, this 6 day of March, 1901.

R. M. JOHNSON, *Register.*

No. 1260. Charter, Lonsdale Beaumont Water Company, Knoxville Water Co. *vs.* M. & A. of the City of Knoxville. Filed December 7, 1901. J. T. Carter, Deputy Clerk.

69 At a meeting of the Town Council of West Knoxville, held at City Hall, September 17, 1892, amongst other proceedings the following ordinance was passed and became law, in words to-wit: (See Record Book pages 193 to 208 inclusive.)

An ordinance to provide for a supply of water to West Knoxville, County of Knox, State of Tennessee, and to its inhabitants, and contracting with Lonsdale-Beaumont Water Co., for a supply of water for public and private use.

Be it ordained by the Town Council of West Knoxville:

SEC. I. That in consideration of the public and private benefit to be derived therefrom, the right and privilege is hereby granted for the period of twenty (20) years, from the time this ordinance takes effect unto Lonsdale-Beaumont Water Comapny, (hereinafter called grantee) of erecting, maintaining and operating a system of water works in accordance with the terms and provisions of this ordinance and using the streets, alleys, ways, public squares and all other public places within the corporate limits of said West Knoxville, as they now exist, or may hereafter be extended (and within such other territory as may now or hereafter come under its jurisdiction by addition or otherwise) for the purpose of laying pipes, mains, and other conduits and erecting hydrants and other apparatus for conducting and furnishing an adequate supply of good wholesome water to said West Knoxville and to its inhabitants, for public

and private use, and for making extensions, additions and repairs to said system, from time to time, during the period for which this ordinance shall continue to be in force.

SEC. II. The said grantees shall exercise all reasonable care and diligence in the use of the said streets, alleys, ways and public places, and shall cause no unnecessary obstruction of or interruption to the public travel over and upon the same, or any unnecessary injury to or interference with any pipes or sewers, which may be now, or hereafter, lawfully located beneath the surface thereof, and said grantees shall also take every reasonable precaution to provide against danger to life and limb by reason of the exercise of the rights and privileges hereby granted, and shall cause all excavations and obstructions to be properly lighted and guarded at night, and after the completion of the purposes for which said sterrts, alleys, ways, public squares and other public places may be used, they shall be carefully tamped and restored to their former condition, as near as may be, without unnecessary delay, and said grantees hereby agree to hold said West Knoxville harmless from any liability which may result to it, by reason of any violation of this Section.

SEC. III. The general plan of this system of water works shall be as follows, viz.:

Mains.

The pipe system shall consist of no less than five and one quarter (5¼) miles of pipe, to be of sizes, varying from four (4) to twelve (12) inches interior diameter, and to be laid on such streets, alleys, avenues, ways, and public places, as may be designated by the Council, after inspection of the plan of pipe line to be hereafter submitted to said Town Council by said grantees: said Council to have the right to confer with a competent civil engineer—and upon which said City may wish to locate hydrants, said pipes to be so located as to form complete circuits in said system, provided, that not more than two hydrants shall be located on a continuous line of four inch pipe, unless the pipe has more than one connection with larger sized pipe; Provided further, however, that said grantees shall have the right to locate and lay their pipes upon any streets, avenues, alleys, ways and public places as they may desire, in order to furnish private consumers with water: Provided further, that grantees shall observe all precautions and be governed be same liabilities in laying such as others, under direction of

All pipes laid to be of standard or heavy weight, and tested at their place of manufacture to withstand a pressure of three hundred (300) pounds per sq. inch, and to be coated with Dr. Angus Smith's preservative varnish.

The said City shall have the right upon the mains hereinbefore provided for, to order the erection of any intermediate fire hydrants the same to be free of charge for water during the time of rental for the hydrants, to be inserted by said grantees at the expense of said City, at the actual cost of such hydrants.

Hydrants.

The hydrant shall be frost proof, double nozzle of approved pattern, with hose tips fitted to connect with such hose couplings as the Town Council may adopt.

Valves.

Valves shall be located at such points as will admit of not over three blocks being isolated from balance of system in case of needed repairs or extensions; they shall be of the most approved pattern,
72 and be capable of withstanding a pressure of 300 lbs. per sq. inch on either surface, and be furnished with box cover.

Pumping Plant.

The pumping plant, including reservoir or stand pipe from which the mains are to be supplied shall be of modern approved type and plan, and be capable of throwing five (5) streams through fifty (50) feet of hose and inch ring nozzle, simultaneously from (5) five separate hydrants, and under such pressure as will throw streams of water fifty (50) feet high on Fort Sanders (so called) said five hydrants to be chosen so as to give a just average, two by West Knoxville, two by said grantees, and the fifth by a disinterested party chosen by Town Council and grantees jointly.

Source of Supply.

The source of supply shall be from Tillery Springs from wells and springs adjacent thereto at or near Sharp's Gap, or from springs and wells at or adjacent to Fountain City, or from springs, lakes or wells on or adjacent to property formerly owned by Middlebrook Park Association, or from one or more of said places and in all cases such supply shall be ample for the needs of the Corporation and its citizens and inhabitants, and be free from sewerage or other contamination, and shall be clear, good and wholesome water, suitable for domestic and manufacturing purposes.

All springs and wells used for said supply, shall be protected from surface water contamination by suitable stone or brick
73 masonry walls: and from matter falling or being thrown into them by seive or other suitable screens being placed and fixed over or about them.

SEC. IV. In consideration of the public benefit and the protection to property resulting from the construction of said system of water works, the said West Knoxville hereby rents of said grantees, fifty (50) double nozzle fire hydrants, to be placed at such points on the mains as may be selected by said Town Council, for the aforesaid period of twenty (20) years, at an annual rental of forty dollars per hydrant; said fifty and all additions thereto, shall bear an annual rental of forty dollars (40) per hydrant during the remainder of said period of twenty (20) years. All of which annual rental of said hydrants shall be paid semi-annually on the first day of January and July of each and every year. All hydrants placed upon

extension of mains in excess of five and one quarter (5¼) miles hereinbefore mentioned shall be placed at the rate of nine per mile of pipe on such extensions.

Water shall be used for such hydrants only for the extinguishment of fires and necessary fire practice: and for the flushing of public sewers and gutters provided that for said flushing of sewers and gutters not more than one hydrant shall be opened at any one time, and only for a period not to exceed six hours (6) per week, during the first five years eight hours per week during the second five years, and ten hours per week for the remainder of said term of twenty years.

Said City shall have the *fight* to flush sewers by hose attached to hydrants or mains, or to tap said mains and insert service
74 mains to connect with the flush tanks of its sewerage system, provided that in so doing no gr-ater amount of water shall be used than hereinbefore provided for flushing purposes.

SEC. V. Water shall be furnished to the corporation schools and public buildings used for town purposes and two drinking fountains, for man and bea-ts, and one ornamental fountain to be erected at such points on the line of mains as the Town Council may direct; if council should direct ornamental fountain at any point not on mains as located, then sufficient piping shall be laid from mains to points where fountains is located, sufficient to supply same with water, the same, in all pipes, fixtures and connections therefor to be furnished and provided by the Town: and no water shall be taken from said fountains for private use: and the *renumeration* to be paid by the town for said service of water shall be equal during the first five years of the operation of the works to such an amount as may from time to time, be levied by Town Council against said water works plant for municipal taxation—said amount to be due and payable annually.

And for the remainder of the term that the franchise and contract is to run, said grantees are to be liable for and pay taxes, and shall furnish water as provided in this section free of cost for purposes named in the section. In case additional drinking or ornamental fountains are ordered by said City, water shall be furnished for the same at the lowest meter rates. Said grantees shall furnish water free of cost to each of the churches of said City, the same passing through self closing fixtures, the expense of which together with all pipes and connections, and the work of inserting the same,
75 to be borne by each of said churches, respectively.

SEC. VI. Upon the completion of construction of said water works, the grantee shall notify the Town Council of the fact, and thereupon an official test shall be made to show the capacity of the works, and if upon such test it shall be shown that said water works comply with the requirements as contained in Sec. III of this ordinance, then and in that case the said Council shall by ordinance or resolution formally accept such system, and thereupon the rental for the hydrants hereinbefore mentioned shall begin.

SEC. VII. Be it further ordained, That within ten days after this ordinance takes effect said grantees shall file their written acceptance

of the ordinance, in the office of the recorder, and thereupon the same shall be and become the contract between the said Town of West Knoxville and said grantee, as fully as if the provisions of this ordinance were embodied in a formal written contract made and executed between said grantee and West Knoxville and said grantee shall also within ten days file with the Recorder a good and solvent bond, in the sum of One Thousand ($1,000.00) Dollars with good local security conditioned, that if the said grantee fail to commence work within the time fixed, and prosecute the same vigorously (with exceptions hereinafter named) or shall fail to build the works as agreed, that grantee shall and will pay West Knoxville One Thousand ($1,000.00) Dollars as liquidated damages for failure in either of the contingencies herein named. and agreeing and providing that the measure of damages for failure to begin work, and prosecute the same vigorously, or to build the works as agreed, shall be one thousand (1,000.00) dollars, and that amount shall
76 be paid as liquidated damages, said bond to be approved by the Mayor before it is accepted by the Recorder.

If works are built and accepted after test, then said bonds shall be cancelled and surrendered. If said bond is not approved by the Mayor, the Council may, if it so elect, declare the contract at an end and forfeited.

The construction of said system of water works shall be commenced within thirty days after this ordinance takes effect and be completed by February 1st, 1893, Provided however, that the time during which work is delayed by the act of God, the public enemy, or strikes, shall form no part of said time, but it is expressly provided, that said works shall be completed within eight months from the time this ordinance takes effect, in any conti-gency and without excuse, let, hinderance or cause of any kind.

SEC. VIII. The said Town Council shall from time to time enact and enforce ordinances inflicting suitable penalties for the protection of said water works and all property and things therewith connected, as well as the business thereof from damage, fraud or imposition.

SEC. IX. The said grantee shall make extension of their line of mains whenever called upon to do so, in any proper season of the year, by said West Knoxville, Provided, however, that said extention shall not be less than five hundred and eighty seven (587) feet in length, and that one public fire hydrant shall be l-cated on each five hundred and eighty seven (587) feet or major part thereof.

SEC. X. After the works are put in operation, West Knoxville may, from time to time have tests made upon same terms as test
77 required for acceptance of works, and if, at any time, the said grantees should fail to produce and maintain the pressure in the mains as hereinbefore provided, the same shall be brought up without delay, unavoidable hinderances excepted, and if unreasonably delayed, then the rental for the use of the hydrants shall cease, until the standard pressure is obtained, provided however, that if such failure shall continue for four (4) consecutive calander months or, if grantees or assigns fail to furnish an ample supply of water as agreed, then all the rights under this ordinance shall at

the election of West Knoxville cease and determine, but nithing herein contained shall be so construed as to pervent grantees from temp-rarily shutting off the water from said system, or any portion thereof, for the purpose of making the repairs or extensions of the same, and no liability shall attach to said grantees for the suspension of the supply of water, provided the repairs or extensions are made and the water turned on again without unnecessary delay.

It is further provided that if the grantees or their successors fail to supply water for the town or citizens then no rental shall be paid by either town or citizens during such failure.

SEC. XI. The said grantees shall not charge consumers during the continuance of the franchise granted by this ordinance, exceeding the following maximum annual rates: these rates, however, to be subject to ten per cent. disco-nt on all bills made, except those where water is metered or used for fire protection, mechanical or manufacturing purposes, if settled within ten days of their date.

78 The following are the said annual rates, viz:

Banks with one self closing faucet	$6.00
" hose connection extra	8.00
Bakeries, daily average each bbl. of flour used, per bbl	4.00
Barber shop, first chair and basin	5.00
each additional chair	2.00
Baths private, without heating attachments	3.00
with " "	4.00
Baths public, first tub	10.00
" each additional tub	6.00
Building purposes, brick per M laid	.08
" " stone per cu. yards	.04
" " plastering per 100 yards	.30
Boarding houses per room—Special.	
Halls, theaters and hotels "	
Laundry, public, per tub	8.00
Offices, one person with wash basin	5.00
" each additional person	2.00
Printing offices, Special.	

Residences occupied by one family:

Four rooms or less	6.00
Five " " "	7.00
Eight " " "	8.00
If over eight rooms then fifty cents additional for each room.	
Restaurants—Special.	
Stables, one horse, including carriage washing	2.00
each additional horse or cow	2.00
Livery, boarding or sale, six horses or less including carriage washing	12.00
for each additional stall	1.60
Sprinkling lawns, 50 feet frontage per season with like frontage on streets	6.00

Urinals, private, with self closing fixtures	4.00
for stores, banks and offices	4.00
" for restaurants and saloons with self closing fixtures.	6.00
public with self closing fixtures	8.00
Water closets, private	4.00
Self closing stores, banks and offices	5.00
Restaurants, saloons, etc., self closing	6.00
Public	8.00

Meter Rates.

100 to 300 Gallons, per 1000 gallons	.30
300 to 1000 " " "	.25
1000 to 5000 " " "	.22
5000 to 10000 " "	.19
10000 to 15000 "	.17
15000 to 20000 "	.15
Above 20000 "	.13

Fountains.

Five hours per day for seven months, 1/16 inch jet	5.00
1/18	8.00
3/16	12.00
5/16	40.00
1/4	45.00

The cost of all pipes and plumbing from the streets mains to the point where the water is to be used, shall be at the expense of the subscriber taking water, said grantee having the right to control the cock at the curb line, and to determine the quality and
79 kind of pipe used between the street main and said curb line.

Said grantees may make and enforce all needful rules and regulations in use and waste of water and charge and collect quarterly in advance therefor, at tariff rates not exceeding those hereinbefore specified, and for all purposes not therein enumerated the rate thereof shall be special rate, not inconsistant with the terms and meaning of this ordinance.

SECTION XII. In the event that the said grantees of this franchise, shall hereafter issue bonds, secured by a mortgage or deed of trust, upon said water works franchise therewith connected, rentals and rights and property then so much of the hydrant rentals and rentals payable under the terms of this ordinance as will discharge the interest upon such bonds, as it shall mature from time to time, shall, from time to time, be paid by said City to the trustee or trustees of such bonds instead of to the grantees, as herein named, when, and as such hydrant rentals are paid under the terms of this ordinance by said West Knoxville, and all payments so made to such trustee or trustees, shall be made exclusively to pay interest upon such bonds so long as the same shall remain due and unpaid, and any surplus, not so payable and the whole after said bonds shall have been discharged, shall be paid over by said City to said grantees, their suc-

cessors or assigns, provided, however, that in making the payments as aforesaid, the said town shall be subjected to no more additional trouble, liability or expense than it would be in paying the said rentals direct to said grantees, their successors or assigns; and provided, further, that the said grantees may issue mortgage
80 bonds in sums not to exceed One Hundred Thousand ($100,000.00) Dollars; for the purchase of necessary property and construction of *of* said water works for West Knoxville as hereinbefore described, and also for the Lonsdale-Beaumont and Rosedale Land Companies and adjacent territory. Said grantees may, from time to time, issue bonds, as above provided for improvements, additions and extensions to said plant in sums not exceeding the actual cost thereof.

And provided further that said town shall incur no liability whatever, as to application of said rentals to the payment of such interest, but when such payments are made to such trustee or trustees, the same shall be a complete exoneration of said town for such rentals.

SEC. XIII. After the expiration of seven (7) years after the completion and acceptance of said water works or at the end of any period of four (4) years thereafter during the terms of this franchise or any renewed periods thereof, West Knoxville or its successor shall have the right to purchase the said water works including the entire plant, out of as well as in West Knoxville, with its privileges, franchises, and property, at a fair valuation ascertained as follows; In case said City, its successors, and said grantees or assigns cannot agree as to the price to be paid by said City to said grantees or assigns for said water works, then each party shall select one competent, non resident hydraulic engineer, who shall be sworn to determine the true value of the works and the two thus appointed, shall appoint a third, who shall also be sworn, When said
81 three appraisers shall have been chosen, and before they determine the value aforesaid, the City or said grantees or assigns, shall each, at their option, have the right to call non resident experts not exceeding three, in behalf of each party, to give testimony under oath before said appraisers as to such value. The said appraisers in determining the value of said works shall take into account the productive value of all rights, privileges and property, and in the event that there is no existing fire hydrant contract at the date of such appraisement, then the last existing contract shall be included in the estimate. Said appraisement shall be binding upon both parties as to the value thereof, and the said City of West Knoxville and its successors, shall have the right to purchase and become the absolute owner of said works as to such appraised value, the cost and expense of such appraisement to be borne equally by said parties.

And should the City or successor elect not to purchase and own the said works in manner and at the time of such appraisement at either of the periods named, then all the rights and privileges of this ordinance, granted to said grantees or assigns shall continue in full force and effect for the remaining term of this franchise, and said City shall pay the entire cost of such appraisement: but in no case shall the amount of such appraisement be less than the actual

cost of said works, and all additions thereto up to the time of said apprais-ment if purchased at the end of seven years first named, but if purchased at any other period named then apprais-ment shall be for value and the puechase shall be at and for the appraised
82 or agreed value regardless of cost.

SEC. XIV. Be it further ordained, that this ordinance shall not be taken, construed or held to in any way effect alter, change or release D. L. McIntyre, George W. Sturtevant, Jr., and their associates and assigns, on their contract or they or their sureties on the bond given, pursuant to an ordinance passed June 29, 1891 and approve- June 30th, 1891, for defaults made, or breaches of contract heretofore made.

SEC. XV. Be it further ordained that this ordinance take effect from and after its passage the welfare of the Corporation requiring it.

Passed final reading Sept. 17th, 1892, Approved Sept. 17th, 1892.

J. W. YOE, *Mayor.*

STATE OF TENNESSEE, *City of Knoxville:*

I, C. C. Nelson, Recorder and Treasurer and Custidian of the books and papers of the City of Knoxville, Tennessee, Do hereby certify the foregoing to be full, true and perfect copy of the ordinance it purports to give as the same appears of Record in my office.

Given under my hand and the seal of the City of Knoxville, Tennessee, August 1, A. D. 1900.

C. C. NELSON,
Recorder & Treasurer.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* M. & A. of the City of Knoxville. Filed Dec. 7, 1901, J. T. Carter, Deputy Clerk. Exhibit 5.

83 *Schedule of Annual Rates for the Use of Water.*

Private Dwellings.

Occupied by one family:

Four rooms or less	$6.00
Five rooms	7.00
Six rooms	8.00
Each additional room	.50
One bath tub for one family	5.00
Each additional bath tub	3.00
One water closet of approved kind for one family	5.00
Each additional water closet	3.00

Where water closets or privy vaults are flushed with water from the sink or other fixtures, a water closet rate will be charged.

One self closing urinal for one family	3.00
Each additional urinal	2.00

Where a house is occupied by more than one family and all are supplied by either the same or separate fixtures full rates will be charged each family the same as if living in a separate house.

No fixtures from which water can be drawn for general purposes shall be allowed unless family rate is also paid.

This rule is general, and applies to stores, offices, etc. Where two faucets are used at one basin one for hot and one for cold water, but one charge will be made; and the same applies to boarding and lodging houses.

Boarding and Lodging Houses.

Six rooms or less	$10.00
Each additional room	1.00
One bath tub	8.00
Each additional bath tub	5.00
One water closet	8.00
Each additional water closet	5.00
One self closing urinal	5.00
Each additional urinal	3.00

Hotels.

Meter Rates.

Stores, Offices, Warehouses and Workshops.

For general use not specially rated, and requiring not more than an ordinary supply of water.

One faucet, for one tenant	$8.00
Each additional faucet, not rated below	3.00

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Bakeries, per bbl. of flour used daily	$5.00
No rate less than	8.00
Barber shops, one faucet, one chair	5.00
Each additional faucet	2.00
No rate less than	8.00
Each additional chair	2.00
Baths, one tub	10.00
Each additional tub	5.00
Dentao offices, one faucet, one chair	8.00
Each additional chair	2.00
Each additional faucet	2.00
Druggists and Apothecaries:	
One faucet	12.00
Each additional faucet	3.00

Soda Fountains—Meter rates.
Tumbler Washers—Meter rates.
Public Laundries—Meter rates.
Motors—Meter rates.

Markets:
One faucet.....$8.00 to 12.00
Each additional faucet..... 3.00
Printing offices—
Exclusive of water for engine or power..... 8.00 to 25.00
Photograph Galleries..... 12.00 to 50.00
Public Bar Rooms..... 10.00 to 25.00
Rest-urants and Dining Saloons, without a public bar..... 8.00
And 50 cents additional for each chair for table guests.
Steam Boilers:
Per horse power..... 2.50

Bath tubs, water closets and urinals for private use connected with a store office, etc., will be charged for at the same rate as for private dwellings; those connected with bar rooms, rest-urants, office buildings, etc., will be charged for at boarding and lodging house rates.

Stables:
Livery and sales stables, meter rates.
Private stables, each horse or cow..... 2.00
Private stables, hose privilege extra.
Hose Sprinklers and Street Washers:
No hose allowed unless water is taken for other purposes at the rates provided therefor.

Rates governed by number of lineal feet frontage and include the privilege of washing windows and sidewalks and sprinkling lawns, also street in front of taker's premices from April 1 to November 1, each year.

A sprinkling rate will be charged where there is a hose fixture, whether same is used or not. When water is turned on to any service having hose fixture, or when hose fixture is added, the rate for sprinkling shall be proportioned as follows:—On or before July 1, full season rate will be charged; after July 1st, one-fourth season rate will
85 be charged per month for all unexpired time of the sprinkling season.

Hose fixtures must not be converted into jets or fountains, nor shall the hose during sprinkling be secured to any frame, post, tree or mechanical device whatever, but shall be held in the hand.

Revolving lawn sprinklers and other like devices are rated as fountains, and unless additional or fountain rates are paid, their use is prohibited.

Dwellings with lawns, etc., as above:
First fifty feet frontage or less..... $8.00
Each additional fifty feet..... 4.00

It being provided that premices having less than seventy five feet shall be rated as of fifty feet, and those having more shall be rated as of one hundred feet.

Business houses:

For first twenty-five feet frontage or less	$6.00
Each additional twenty-five feet	3.00

It being provided that premices having less than thirty seven and one-half feet shall be rated as twenty-five feet, and those having more as fifty feet.

The use of hose and hose sprinklers is limited to two hours a day, between 6 and 8 o'clock A. M. or 5 and 7 o'clock P. M., as users may elect, with nozzles not exceeding one quarter inch orifice.

Fountains:

Use limited to six (6) hours only per day for seven moanths each year.

For a jet of 1/16 inch	$5.00
" " " 1/8	8 00
3/16	12.00
1/4	25.00
5/16	45.00

or by meter at the discretion of the company.

Building purposes:

Mortar for laying bricks per thousand	$0.10
" " " stone " cu. yd	.04
" " plastering per 10(sq. yds.	.35
Mortar for other purposes, for each cask of lime or cement used	.10
Cement sidewalks, per 100 sq. ft.	.25

The company reserves a right to attach a meter to any service at its option, and in lieu of the above rates, charge the following:

Meter Rates.

0 to 50 M. gals, monthly	25c per M. gallons
50 to 100 M. gals. "	20 " " "
100 to 150	15 " " "
150 to 200	12 " " "
200 to 250	10 " " "
250 to 350	9 " " "
350 to 1,000,000	8 " " "
Above 1,000,000	7 " " "

Provided, that the charge at any given rate shall not exceed the maximum charge at the next lower rate.

86 Provided, that the minimum meter charge shall not be less tahn $10.00 oer annum and meter rent.

Meter Rent.

$1.00 per annum for each 1/4 inch nominal size of meter

Elevator Service.

For amount of water used as registered by indicator meter rates will be charged.

Hydraulic elevators and indicators must be kept in repair and proper working order at the expense of the owner or occupants of premices. When the indicator is out of order, and is not repaired within a reasonable time, the supply will be turned off.

Fire Protection.

Automatic Sprinklers or Hose Outlets, used exclusively for fire protection in buildings, for each 1,000 sq. ft, of floor surface or fraction thereof, per annum $3.00

Provided, that the amount of water rent paid for other purposes on premices havin*t* fire protection fixtures, shall be abated to an amount not exceeding the charge for said fire protection, as per above.

Fire hydrants, with outlets like or similar to city hydrants, each per annum $45.00

And no reduction or abatement on account of water used for other purposes at the rate provided therefor.

All fixtures used exclusively for fire protection shall be sealed by the water Company, and said seals shall not be broken except in case of fire, If any seals are found broken, except for said cause, the water will be shut off until all water used from said fixtures has been paid for, and, in addition thereto, the sum of $10.00 for labor, breach of contract, etc.

Cisterns.

No cisterns filled where parties may be supplied from mains, unless application for water has been made, then, for $2.00, a permit will be granted to fill one, pending the laying of main, and service attachment. If supply immediately follows, the Cistern charge will be refunded. Parties who can not be supplied from mains may obtain permit at above rate.

Rules and Regulations.

(Subject to Additions and Amendments).

The Water Company imposes no restrictions on its patrons which impair their right to the use of water for all necessary purposes; but only such as are necessary to prevent waste, and for the mutual protection of the Water Company and its customers.

The following rules and regulations shall govern the use
87 of water under the foregoing rates, and shall therefore be considered a part of the contract with every person who shall be supplied thereunder:

Application for Water.

1. All applications for the introduction and use of water must be entered upon the application book at the Company's office, which is to be filled out, stating truly and fully the use to which the water is to be applied, and signed by the owner of the premices to be so supplied, or a duly authorized agent, before the supply will be furnished; and said application shall constitute the contract between the Water Company and said owner, and shall be held to bind said owner for one year. and to further bind said owner, for this and such further time as the water shall be turned on, to pay to the Water Company its established rates, and to comply with all its rules and regulations. At any time, after the expiration of one year from the date of application the water will be turned off at the option of the owner, upon notice left at the office of the Company.

2. Service pipes will be laid in all cases by the Water Company from the main to the street line, and the same furnished with a curb stop and all other hardware within streets limits, and also a stop and waste, properly protected, just inside the property line, so arranged as to be accessible at all times to the occupants of the premices. The owner of the premices will be charged the sum of ($10.00) ten dollars for each service attachment of three quarters of an inch in diameter, so made; which sum shall be due and payable at the time the application is made.

3. The Company reserver the right to refuse to allow the work of any plumber to be connected with its pipes, unless such plumber has complied in all cases with its rules and regulations perti-
88 nent thereto. The water will not be turned on to any premices until the plumber has reported in writing to the office of the Company the number and kind of fixtures he has connected with the pipes, as required, (See Section 4 of Plimbers guide and rules).

4. No addition to or alteration of any pipe or fixture changing or affecting the use of water shall be made by any person without permission in writing of the Company. Any such change of fixtures, or any improper use of water will be charged for at 50% above the schedule rates; and if not paid promptly, the water will be shut off, and it will not be let on until all dues are paid, with the additional payment of $1,00 for turning off and on. and no abatement will be made for the time the water is so shut off.

5. When water shall be supplied to more than one owner or tenant through a single tap, the bill for the whole supply furnished through such tap will be made to one of the owners who shall agree to be responsible therefor. In case of nonpayment of any portion of the rates due thereon, the right is reserved to shut off the water from the whole, notwithstanding a portion thereof may have been paid.

6. In all occupied premices, where no meter is used every faucet, water closet, bath tub, set basin, sink, fountain, or any other fixture, whether used or not will be deemed and held as used, and will be charged for so long as it shall remain connected with the service pipes. Parties desiring to discontinue the use of any fixtures, must have the same disconnected, and then the charge for their use (except for sprinkling, which is charged for by the season) will cease from the time when notice of the same is left at the Company's office.

7. Owners shall be so far responsible for tenants that no
89 new tenant shall be entitled to a supply until all arrears for water used on the premices are paid.

8. The Company, by its agents may enter the premices of any water taker at all reasonable times, to examine the pipes and fixtures, the quantity of water used, and the manner of its use.

9. No consumer shall supply other persons or families with water for use elsewhere, nor suffer them to take it from the premises; nor shall any person take or carry away water from any hydrant, watering-trough, or public fountain, without the consent of the Company. Any person found violating the above rule, will be prosecuted to the full extent of the law provided in such cases.

10. There shall be no waste of water, no concealment of the purposes for which it is used, and it must not be left running to prevent freezing; and all devices permitting a continuous flow of water where it is not metered, are strictly prohibited, unless a special permit for their use is obtained from the Water Company.

11. All persons taking the water shall keep the service pipes within their premices in good repair and protected from frost at their own expense; and they will be held liable for all damages which may result from a failure to do so. The Company reserves the right, whenever it shall find any fixtures leaking or in bad condition, thereby causing a waste of water, to shut off the water from the premices, without notice, and to keep the same shut off until all the fixtures shall have been repaired and put in good condition.

12. The Company reserves the right to shut off the water from any of the mains, upon notice, while making extensions and repairs, and all similiar purposes; also to shut off *hte* water without
90 such notice whenever the exigencies of the case require, and to keep it shut off as long as may be necessary.

13. The Company also reserves the right, whenever it shall be deemed necessary to keep up the supply for fire protection and domestic purposes, to temporarily stop the supply for hose, fountains, elevators, etc.

14. All bills due the Company are payable at its office; those for regular water rates, quarterly, and in advance, on the first days of January, April, July, and October; all other bills for water, labor or materials at the time of their contraction.

If any bills remain unpaid for twenty days after they become due, the water will be shut off; and on all bills paid after the water has been shut off, the sum of one dollar, in addition to the amount of the bill, must be paid before the water will be turned on again.

15. For all vacated premices where the water can be shut off with-

out depriving takers, abatements will be made for the whole time they are vacant; but a charge of fifty cents will be made for shutting off and let-ing on the water, All such abatements will date from the time when notice of vacancy is left at the office of the Company. and no abatement will be made unless such notice is given.

16. In case of violation by a water taker of any regulation established by the Company, or for the unlawful or surreptitious use of water, the supply may be shut off from the premices in default, and it will not again be let on until all cause of complaint shall have been removed and dues paid, with an additional payment of one dollar for turning off an*f* on; and no abatement will be made for the time the water is so shut off.

91 17. Any person turning on curb cocks, or in any way meddling with the same or other property of the Company, unless duly authorized by the superintendent of the Water Co. will be prosecuted to the full extent of the law.

18. No person shall open or interfere with any of the fire hydrants without permission of the Company or of the chief engineer of the Fire Department.

19. It is expressly stipulated by the Company that no claim shall be made against it or the City by reason of the breaking of any fixtures or service pipe within the premices of any consumer.

20. The right is reserved to amend or add to these rules and regulations as circumstances may show to be necessary.

Plumbers' Guide and Rules Governing the Introduction of Water.

1. No person shall do any work in connection with the introduction of water into any premices or alter or extend the service, except he or they be duly licensed by the Knoxville Water Company; and, if the ordinance of the City of Knoxville shall so require, by the said City also.

2. A plumber wishing to do business in connection with the said water works, shall first give a bond to the said water Company, with surety or securi*b*ies approved by said Company, in the penal sum of one thousand dollars, that it will be governed by the existing rules and regulations of the Water Company, and also any that may hereafter be made; and to indemnify and save harmless the City of Knoxville and the Knoxville Water Company of and from all accidents, damages and losses which either may sustain by reason of negligence on his part or by any lack of compliance with such rules and regulations as are now or may hereafter be established by the City or the Water Company, or from the use of defective material, or bad work.

92 3. All taps will be made, and all service pipe as far as the property line, including stop-cock, service box and stop and waste, will be furnished and laid, by the Water Company upon the application of the owner of the premices Pipes must be connected up in the trench to the property line so that immediate connection can be made and the work inspected, while under pressure, by the inspector of the Company.

4. Before performing any work that involves tapping the mains, the plumber must have a permit from the office of the Water Company, and within twenty four hours after having completed the work covered by said permit, must return it — the office, with a report of the work done, in accordance with Sec. 10. showing exactly what he has done, kind of pipe used, number of fixtures attached, and especially refer to hose connections if any. The water will not be turned on to any premices until the plumber shall have filed his report as above. After the water has been turned on, if any plumber makes any alterations in any of the pipes, or any addition to the fixtures, he shall immediately make due return of the same to the office of the Company upon blanks furnished him for that purpose.

5. All iron pipes must be galvanized or otherwise protected by some process satisfactory to the Superintendent of the Water Company, and strong enough to sustain a pressure of not less than two hundred pounds to the square inch. In connecting lead pipe with iron pipe a brass coupling must be used, and in no case can lead be soldered to iron. On service work, and on all pipe buried in the ground, where lead is used, the joints must be extra strong and well made.

6. All service pipe just be laid at least thirty inches below the surface of the ground, and kept in good repair at the expense of the owner.

93 7. No out door fixtures will be allowed excepting surface hydrants (known as street washers) and sill cocks and these are to be used only for the *ouepose* of attaching hose for sprinkling; and in no case will yard hydrants or other door appliances for furnishing water be allowed.

8. It shall be the duty of the plumber before making returns, to inform persons having hose bibbs or hose connections that a hose rate will be charged by the Company, whether the occupant has hose or not.

9. Diagrams must accompany the returns of the permit, and must be made specific. They are an important element in the Company's record, and are intended to be so accurate that all parts of the service pipe buried in the ground can be easily found by the Company's inspector, and the diagram must be made to show by measurements the location of all parts of it, so that it can be readily found after having been covered.

10. No extension or alteration of any service pipe or fixture can be made without notifying the office of the Company under penalty or forfeiture of his licence by the plumber.

11. For the purpose of preventing waste of water by the improper design or construction of water fixtures, the Company reserves the right to control their selection. Plug-cocks will not be allowed, except for stop-and-waste cocks. All urinals shall be operated with self closing valves. No water closet fixtures allowed except those of approved pattern and flushed from a tank.

No. 12. Any failure to comply with these rules will cause the licence of the plumber to be revoked or suspended at the discretion of the Company.

13. The Company will not allow its mains to be connected with the work of any plumber who has violated any of the above rules; or, if connected before any such violation takes place, will not allow the water to be turned on until the plumber so violating the
94 rules shall have made good his default and renu-ed his licence.

14. Under no circumstances will the plumber be permitted to turn the curb-cock off or on, or in any way meddel with it or other property of the Comapny, under penalty of forfeiture of his licence.

(Endorsements:) No. 1260. Knoxville Water Company, vs. M. & A. of the City of Knoxville. Filed Dec. 7, 1901. J. T. Carter, Deputy Clerk. Exhibit, No. 6.

At the regular meeting of the Mayor and Alderman of the City of Knoxville, Tennessee, held Friday October 20th, A. D. 1899.

Amongst other proceedings of said Board the following is a copy of an ordinance passed on 3rd, and last reading as the same appears on the minutes thereof, pages 192, '3, '4, & '5, with acceptance etc., date above given, and the same is in words to-wit:

An ordinance authorizing and giving the consent and approval of the City of Knoxville to the Consolidation of the Knoxville Water Company, and the Lonsdale-Beaumont Water Company, and making changes in certain provisions of the contract between the Lonsdale-Beaumont Water Company and the Town Council of West Knoxville, known as the contract of Sept. 17th, 1892, and also making changes in certain provisions of the contract between the Board of Mayor and Alderman of the City of Knoxville, and
95 the Knoxville Water Company, dated July 1st, 1882.

Be it ordained by the Board of Mayor and Alderman of the City of Knoxville:

Sec. 1. That the consent and approval of the City of Knoxville is hereby given to the consolidation of the Knoxville Water Company and the Lonsdale-Beaumont Water Company into one corporation under the name of the Knoxville Water Company.

Be it further ordained:

Sec. 2. That such consolidation may be effected be consolidation, purchase, lease, or otherwise, under the laws of the State of Tennessee, as may be deemed best by said consolidating Companies.

Be it further ordained:

Sec. 3. That the said Knoxville Water Company, so succeeding to the rights, franchises and property of the Lonsdale Beaumont Water Company, and the present Knoxville Water Company, may obtain its supply of water to be furnished to its consumers, both public and private from the existing plant and system of the present Knoxville Water Company, or some other plant, system or source equally as good as that now used by said Knoxville Water Company an- the service thus to be rendered and the supply so to be furnished shall be deemed and regarded as a satisfactory performance by said

consolidated Knoxville Water Company of all obligations both publis and private under existing contracts of either or both of said consolidating Companies Provided, always, said Knoxville Water Company shall furnish to the people living in what is now the Tenth ward of the City of Knoxville (being the territory formerly known as the City of West Knoxville) as well as those that may hereafter live in said territory clear, good, and wholesome water free
96 from all sewerage, and other contemination equal in quality to that now being supplied by the Knoxville Water Company to the City of Knoxville, at a maximum rate not exceeding that fixed in the ordinance and contract of September 17th, 1892, being the contract between the Lonsdale-Beaumont Water Company and the Town Council of West Knoxville and shall maintain and keep up the pressure provided for in said ordinance, and contract. And shall in all other respects maintain and carry out the provisions of said contract unimpaired, except as modified in this ordinance.

A*he* provided further: That said consolidated Knoxville Water Company succeeding as aforesaid to all the rights, privileges anfranchises of both Companies shall also furnish to the people living in the remaining Wards of the City of Knoxville other than said Tenth ward or who may hereafter live in said remaining Wards, or such Wards as may be hereafter added to the City of Knoxville, filetred and wholesome water, or water equal in quality to the filtered water now being furnished by said Knoxville Water Company, at a maximum rate, not exceeding that fixed by the contract between the Knoxville Water Company and the City of Knoxville, dated July 1st, 1882. And the schedule of rates and charges now in force and operation by the Knoxville Water Company.

Be it further ordained:

SEC. 4. That the property and franchise which may be obtained by said consolidated Company as the result of said consloidation whether *B*he same be effected by consloidation, purchase, lease or otherwise shall be subject to the right of the City to purchase the same, in as full and complete a manner, as the property now owned by the Knoxville Water Company is subject thereto, under
97 the terms and provisions of the contract existing between the City of Knoxville and the Knoxville Water Company, dated July 1st, 1882, and said right or option of the City of Knoxville, as set forth in said contract of July 1st. 1882, is hereby extended and made to cover all the property, franchise, rights and privileges now owned by the Knoxville Water Company or which may be hereafter acquired by it or said consolidated Company.

Be it further ordained:

SEC. 5. That in order that the consolidation hereinbefore provided for may be effected and to enable the Knoxville Water Company and the Lonsdale-Beaumont Water Company to fund their existing debts and obligations and to provide funds to improve the consolidated plant, and make extensions thereto, and in consideration of the benefits to be derived therefrom by the City of Knoxville and its inhabitants, the Knoxville Water Company shall guarantee or fund the existing debts of said companies, and the Knox-

ville Water Company is hereby released from taht provision of its contract with the City of Knoxville, dated July 1st, 1882 as aforesaid, limiting its indebtedness to $150,000.00 and such provision or limit in said contract is hereby abrogated and annul-ed.

Provided, however, that no more than Eight Hundred Thousand Dollars, ($800,000.00) of bonds shall be issued prior to the first day of January 1901, and provided furtheer that no bonds in excess of Eight Hundred Thousand Dollars ($800,000.00) shall be issued except to provide funds for additions to or improvements of the plant and property of said Water Company and any bonds so issued said Knoxville Water Co. shall file with the Recorder of the City of Knoxville, a sworn certificate showing the actual cost of such additions or improvements, for which bonds may be issued.

98 Be it further ordained:

SEC. 6. That within thirty days after this ordinance takes effect, said Lonsdale-Beaumont Water Company and said Knoxville Water Company shall file their several written acceptance- of this ordinance, in so far as it alters or changes said contract of September 17th, 1892, and of July 1st, 1882, signed by the President and Secretary of each of said Companies in the office of the Rec-rder of the City of Knoxville and thereupon this ordinance shall be and become a part of each of said contracts as fully as if the provisions of this ordinance were embraced in formal written contract made and executed between the City of Knoxville and said Lonsdale Beaumont Water Company and said Knoxville Water Co.

Be it further ordained:

SEC. 7. That said Lonsdale Beaumont Water Company and Knoxville Water Company shall pay for the publication of this ordinance.

Be it further ordained

SEC. 8. That this ordinance shall take effect from and after its passage, the welfare of the City requiring it.

Endorsed: Approved Oct. 20, 1899 (Signed) Wm. Rule, Mayor.

"There after the following papers of acceptance were filed with the Recorder and ordered entered on the minutes of the Board and the same are in words to wit;

"To the Board of Mayor & Alderman of the City of Knoxville:

The Lonsdale Beaumont Water Company does hereby accept the ordinance passed on the 20th, day of October 1899 by the Board of Mayor and Alderman and approved by the Mayor on the 20th day of October 1899, entitled as follows;

"An ordinance authorizing and giving consent and approval of the City of Knoxville to the consolidation of the Knox-
99 ville Water Company and the Lonsdale Beaumont Water Company and making changes in certain provisions of the the contract between the Lonadale Beaumont Water Company and the Town Council of West Knoxville, known as the contract of Septemder 17th, 1892, and also making changes in certain provisions

of the contaract between the Board of Mayor & Alderman of Knoxville and the Knoxville Water Company, dated July 1st 1882. This acceptance is intended to be in pursuance of the provisions of Section 6 of said ordinance.

In testimony whereof, we Elbert Wheeler as President and Frank C. Kimball, as Secretary of th- Lonsdale Beaumnot Water Company, do hereby sign and execute this acceptance on this the 20th, day of October 1899.

(Signed) ELBERT WHEELER,
President of the Lonsdale-Beaumont Water Company.
FRANK C. KIMBALL,
Secretary of the Lonsdale-Baeumont Water Company.

The following appears of record on page 96 of the minutes of the Board of Mayor and Alderman of the City of Knoxville at said meeting, Friday October 20th, A. D. 1899, in words to-wit;—

To the Board of Mayor & Alderman of the City of Knoxville:

The Knoxville Water Company does hereby accept the ordinance passed on the 20th, day of October 1899, by the Board of Mayor and Alderman and approved by the Mayor on the 20th, day of October, 1899, entitled as follows;

An ordinance authorizing and giving the consent and approval of the City of Knoxville to the consolidation of the Knoxville Water Company and the Lonsdale-Beaumont Water Company and
100 making changes in certain provisions of the contract between the Lonsdale-Beaumont Water Company and the Town Council of West Knoxville, known as the contract of September 17th, 1892, and also making changes in certain provisions of the contract between the Board of Mayor & Alderman of Knoxville and the Knoxville Water Company, dated July 1st, 1882.

This acceptance is intended to be in pursuance of the provisions of Section 6, of said ordinance.

In testimony whereof, We, William Wheeler, as President and John F. Mulhal, as Secretary of the Knoxville Water Company, do hereby sign and execute this acceptance on this the 20th day of October 1899,

(Signed) WILLIAM WHEELER,
President of the Knoxville Water Company.
JOHN F. MULHAL,
Secretary of the Knoxville Water Company.

STATE OF TENNESSEE, *City of Knoxville:*

I, C. C. Nelson, Recorder and Treasurer of the City of Knoxville, Tennessee, do hereby certify the foregoing to be full, true and perfect copies of the ordinance it purports to give and the acceptance of said ordinances, which it also gives, as the same is now of record in my office on the minutes of the Board of Mayor and Alderman *of the Board of Mayor and Alderman* of the City bearing date Friday October 20th, 1899.

Given under my hand — seal of said City at offices in Knoxville, Tennessee, August 6, A. D. 1901.

C. C. NELSON,
Recorder & Treasurer of the City of Knoxville, Tennessee.

I, C. C. Nelson, Recorder & Treasurer do further certify the foregoing ordinance was copied by me & Published in Journal & Tribune, a newspaper published in this city in the issue thereof of Oct. 26, A. D. 1899.
Dec. 7, 1901.

C. C. NELSON, *Recorder.*

101 (Endorsements:) Knoxville Water Company, *vs.* M. & A. of the City of Knoxville. Filed, Dec. 7th, 1901. J. T. Carter, Deputy Clerk.

EXHIBIT No. 7.

An ordinance to regulate the maximum rate to be charged to the consumers of water by any person, firm or Corporation in the City of Knoxville.

SEC. 1. Be it ordained by the Board of Mayor and Alderman of the City of Knoxville; That no person or Company, firm or corporation furnishing water to the City of Knoxville or the inhabitants thereof, shall charge a higher maximum rate per annum or by meter for water than set out in the following schedule, to wit:

Private Dwellings per Annum.

Occupied by one family:	
Four rooms or less	$4.80
Five rooms	5.60
Six rooms	6.40
Each additional room	.50
One bath tub for one family	4.00
Each additional bath tub	2.50
One water closet of approved kind for 1 family	4.00
Each additional water closet	2.50
One self closing urinal for one family	2.50
For each additional urinal	1.50

Boarding and Lodging Houses per Annum.

Six rooms or less	$8.00
Each additional room	.50
102 One bath tub	6.50
Each additional bath tub	4.00
One water closet	6.50
For each additional water closet	4.00
One urinal	4.00
Each additional urinal	2.25

Hotels.

Meter rates.

Stores, Offices, Warehouses, and Workshops.

For general use not specially rated and requiring not more than ordinary supply of water per annum:

One faucet for one tenant	6.50
Each additional faucet not rated below	2.25

Bakeries per Annum.

Per barrel of flour used daily	4.00
No rate less than	6.50

Barber Shops per Annum.

1 faucet, 1 chair	$4.00
Each additional faucet	1.50
Each additional chair	1.50
No rate less than	6.50

Baths per Annum.

Public 1 tub	$8.00
Each additional tub	4.00

Dental Offices per Annum.

One faucet one chair	$6.50
Each additional chair	1.50
Each additional faucet	1.50

Druggists & Apothecaries per Annum.

One faucet	$9.50
Each additional faucet	2.50

103 Soda Fountains.

Meter Rates.

Tumbler Washers.

Meter Rates.

Public Laundries.

Meter Rates.

Markets per Annum.

One faucet	$6.50 to $9.50
Each additional faucet	2.25

Printing Office per Annum.

Exclusive of water for engine or power..... $6.50 to $18.00

Photograph Galleries per annum.

....

Public Bar rooms.....$8.00 to $18.00

Rest-urants & Dining Saloons per Annum.

Without a public bar..... $6.50
and 40 cents additional for each chair for table guests.

Steam Boilers per Annum.

Per horse power..... $2.00

Bath tub, water closet and urinal for private use connected with a store, office etc., same rate for private dwellings; those connected with bar rooms, rest-urants, office building, saloon etc., same as for boarding and lodging house rates.

Stables.

Livery and sale stables
Meter Rates.
Private stables per annum
Each horse and cow..... $1.50

104 Hose Sprinklers & Street Washers.

Rates governed by number of lineal feet frontage and include the privilege of washing windows, porches and sidewalks, and sprinkling lawns, also the street in front of the taker-, premices at the following rates per annum for each poction of the year as actually used for all the above purposes.

Dwellings with lawn etc. fifty feet frontage or less..... $6.50
Each additional 50 feet..... 3.00
Premices having less than 75 feet shall be rated as of 50 feet and those having more shall be rated as of 100 feet.

Business Houses.

For first 25 feet frontage or less..... $4.50
Each additional 25 feet..... 2.25
Premices having less than 37½ feet shall be rated as 25 feet and those having more as 50 feet.

Fountains per Annum.

Use limited to 6 hours only per day for 7 months of each year.

For a jet of 1/16 inch..... $5.00
For a jet of ⅛ " 8.00
For a jet of 3/16 " 12.00
For a jet of ¼ " 25.00
For a jet of 5/16 " 45.00
or by meter at the direction of the Company or consumer.

Building Purposes.

Mortar for laying brick per thousand..... .08
Mortar for laying stone per cu. yd..... .03
Mortar for plastering per 100 sq. yds..... .28
105 Mortar for other purposes for each cask of lime or cement used..... .08
Sement side walks per 100 sq. ft..... .20

Meter Rates.

0 to 50 M gals. monthly	per	thousand	gals	.....	.18
50 to 100 M gals. monthly	"	"	"	.....	.16
100 to 150 M gals. monthly	"	"	"	.....	.12
150 to 200 M gals. monthly	"	"	"	.....	.08
200 to 250 M gals. monthly	"	"	"	.....	.07½
250 to 350 M gals. monthly	"	"	"	.....	.06
350 to 1,000,000				.....	.05
Above 1,000,000 gals. monthly				.....	.05

Provided that the charge at any given rate shall not exceed the maximum charge at the next lower rate. Provided that the minimum meter charge shall not be less than $8.00 per annum and meter rent.

Meter Rent.

80 cents per annum for each ¼ inch nominal size of meter.

Elevator Service.

For amiunt of water used as registered by the indicator meter rates are to be charged.

Fire Protection.

Automatic sprinkler or hose outlets, used exclusively for fire protection in buildings, for each 1,000 sq. ft. of floor space or fraction thereof, per annum $2.25 Provided that the amount of water rent paid for other purposes on premices having fire protection fixtures shall be abated to an amount not exceeding the charge for said fire protection as per above.

Fire hydrants with outlet like or similar to city hydrants each per annum $45.00.

And no reduction or abatement on account of water used for other purposes at rate provided therefor.

106 SEC. 2. Be it further ordained: That it shall be a good defence to any action brought against any consumer of water in the city of Knoxville by any person, company, firm or corporation for the use of water, for such consumer to show that he has paid for the water so used by him at the foregoing rate or tendered the payment of the same before suit was brought with the tender continuing as required by law in case of tender to date of trial.

SEC. 3. Be it further ordained, That it shall be unlawful for any person company firm or corporation or their officers agents servants or employés supplying water to inhabitants of the Coty of Knoxville to charge demand or collect for water so supplied more than the rates hereinbefore set forth in Sec. 1 of this ordinance and it shall also be unlawful for any such person company firm or corporation or their officers agents servants or employés to cut off or other wise interfere with the supply or refuse to furnish a supply of water to any consumer for failure to pay for same, provided such consumer tenders in lawful money the charge for such water at the rates aforesaid and any violation of the provision of this Section of this ordinance shall be a misdemeanor and upon conviction thereof

before the Recorder the offender shall be punishable by a fine of not less than Ten ($10) Dollars nor more than Fifty ($50) Dollars for each offence.

SEC. 4. All ordinances or parts of ordinances in conflict herewith be and the same are hereby repealed, and this ordinance shall take effect and be enforced from and after its passage, the welfare of the City requiring it.

Approved March 30, 1901.

S. G. HEISKELL, *Mayor.*

Passed thire and last reading March 30th, A. D. 1901.

Attest:
C. C. NELSON, *Recorder.*

107 KNOXVILLE, TENN., *Nov.* 19 *A. D.* 1901.

I, C. C. Nelson, Recorder of said City, Do hereby certify the foregoing to be a full true and perfect copy of the ordinance it purports to give, as the same was passed and now appears of record on the minutes of the meeting of the Board of Mayor & Alderman of said City and now in my office as Recorder thereof.

Given under my hand and the seal of said City, date above given.

C. C. NELSON, *Recorder.*

I further certify that the foregoing ordinance was published in the Knoxville Sentinel a news paper of this City in its Issue of March 31, A. D. 1901.

[SEAL.] C. C. NELSON, *Recorder.*

(Endorsements:) No. 1260. Knoxville Water Co. *vs.* M. & A. of the City of Knoxville. Filed Dec. 7, 1901. J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee. In Equity.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
BOARD OF MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE.

108 Comes now the Complainant, Knoxville Water Company, and files its motion for a preliminary writ of Injunction in accordance with the prayer contained in its Bill.

KNOXVILLE WATER COMPANY,
By CHAS. T. CATES, JR., *Sol.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company against Mayor & Aldermen of the City of Knoxville. Motion for Injunction. Filed Dec. 7, 1901. J. T. Carter, Deputy Clerk.

In the United States Circuit Court in and for the Northern Division of the Eastern District of Tennessee. In Equity.

No. 1260.

KNOXVILLE WATER COMPANY, Compl't,
vs.
MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE, Def't.

Whereas, in the above entitled cause, a motion for the issuance of a preliminary writ of injunction has been duly filed, the hearing therefore being fixed for Monday the 23rd day of December 1901, before myself at Chambers in the City of Chattanooga,
109 Tenn., and it having been made to appear that there is danger of irreparable injury being caused to Complainant before the hearing of said application for the writ of injunction, unless the said Defendant, Mayor & Aldermen of the City of Knoxville, is — pending such hearing mentioned as herein set forth, therefore Complainants' application for such restraining order is granted.

Now, therefore, take notice that you, the Mayor & Aldermen of the City of Knoxville, defendant herein, your agents servants and Attorneys, and each of you, are hereby specially restrained and enjoined from instituting or prosecuting and suits whatsoever for penalties on account of Complainants' failure to comply with the ordinances of March 30, 1901, and October 4th, 1901, both being fully described in the Bill in this cause, or taking any step or proceedings to compel Complainant, Knoxville Water Company to comply with said ordinances, until the hearing upon said application for writ of injunction and the further order of the Court in the premises.

But this order is not intended to affect in any way the cause pending between Complainant and Defendant in the Supreme Court of the United States upon writ of error to the Supreme Court of Tennessee.

This 10th day of December, 1901.

C. D. CLARK, *Judge.*

(Endorsements:) No. 1260. Restraining Order. Knoxville Water Company *vs.* M. & A. of the City of Knoxville. Filed, Dec. 11, 1901. 9.45 a. m. J. T. Carter, Deputy Clerk.

110 This 10th day of December, 1901.
(Signed) C. D. CLARK, *Judge.*

UNITED STATES OF AMERICA,
Eastern District of Tennessee, ss:

I, Henry O. Ewing, Clerk of the Circuit Court of the United States for the Eastern District of Tennessee, do hereby certify that the foregoing is a full, true and correct copy of the Restraining Order in the cause of the Knoxville Water Company *vs.* the Mayor

and Aldermen of the City of Knoxville as the same appears on file in my office.

Witness my hand and the seal of the said Court at office in Knoxville, Tennessee, this 11th day of December, A. D. 1901.

HENRY O. EWING, *Clerk,*
By J. T. CARTER,
[SEAL.] *Deputy Clerk.*

(Endorsements:) No. 1260. In the United States Circuit Court at Knoxville. Knoxville Water Company *vs.* Mayor & Aldermen of the City of Knoxville. Restraining Order. Filed Dec. 13, 1901. J. T. Carter, Deputy Clerk.

111 Received at Knoxville, Dec. 11 1901.

Executed in full as commanded by making known the contents of and by delivering a copy of this writ to S. G. Heiskell, Mayor of the City of Knoxville at Knoxville Knox County, Dec. 11, 1901 at 2.30 P. M.

A. G. MATTHEWS,
Deputy Marshall.

Marshall cost $2.00.

Entry on Rule Docket.

1901, Dec. 18, Comes Pickle & Turner, Solicitors and enters the appearance of Defendant in this cause.

(Signed) PICKLE & TURNER, *Sols.*

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee at Knoxville, Tennessee.

In Equity. #1260.

KNOXVILLE WATER COMPANY
v.
BOARD OF MAYOR & ALDERMEN OF KNOXVILLE.

The Demurrer of the Defendnat to the Bill of Complaint Filed by the Complainant in the Above Styled Cause.

This defendant, by protestation, not confessing or acknowledging all or any of the matters or things in the said bill of complaint contained, to be true in such manner and form as the same are therein set forth and alleged, doth demur to the said bill and for causes of demurrer showeth:—

I.

That said bill discloses no ground upon which this Court has jurisdiction of the parties or of the subject matter of this suit.

112 II.

That it appeareth from the allegations of said bill that the com-

plainant is not entitled to the relief aought thereby or to maintain its said bill against this defendant.

III.

That it appeareth from said bill that the matters presented by this bill are all *res adjudicata* in said suit of the Board of Mayor & Aldermen of Knoxville against the Knoxville Water Co. brought by this defendant against the Complainant herein before the Recorder of this defendant, and taken by appeal of this complainant to the Circuit Court of Knox County, Tenn., and thence by appeal of this defendant to the Supreme Court of Tenn., and there finally adjudicated in favor of this defendant, and the complainant is precluded thereby from re-opening and relitigating the same issues in this cause.

"IV."

That it appeareth *form* said bill that a former suit, to-wit:—the one mentioned in the bill and in the last foregoing ground of demurrer was, at the time of the bringing of this bill and is still, pending on writ of error, sued out by the complainant herein to the judgment of the Supreme Court of Tennessee, in the Supreme Court of the United States at Washington, D. C., which pending suit on such writ of error involves all issues in this cause, of which the Federal Court has jurisdiction, and this suit ought not therefore to be maintained by the complainant for the same cause of action, pending said former suit.

"V."

That it appeareth from said bill that the Complainant is not a person in law or a legal corporation, in that the statute of Tennessee, to-wit, the Act of 1877 Chap. 104, under which the Com-
113 plainant is alleged to be incorporated was passed in violation of the Constitution of Tennessee, Art. 2, Sec. 17, and hence is unconstitutional and void, and the complai-ant's alleged charter is consequently void and the complainant cannot maintain this suit.

Wherefore, and for divers other good causes of demurrer appearing in said bill, this defendant doth demurr*er* thereto, and it pa*r*ys the judgment of this Honorable Court whether it shall be compelled to make any answer to said bill, and it humbly prays to be hence dismissed, with its reasonable costs in this behalf sustained.

PICKLE & TURNER, *Sols.*

We hereby certify that the foregoing demurrer is, in our opinion, well founded in point of law.

PICKLE & TURNER, *Sols.*

STATE OF TENNESSEE, *County of Knox:*

Personally came before the undersigned authority, S. G. Heiskell, who being duly sworn upon his oath deposes and says that he is the Mayor of the City of Knoxville and has authority to represent it in

this matter, and that the foregoing demurrer is not interposed for delay.

S. G. HEISKELL,
Mayor of Knoxville.

Sworn to and subscribed before me, on this 21st, day of Dec. 1901.

[SEAL.] WESLEY T. KENNERLY,
Notary Public.

Notary's Fee 25¢.

(Endorsements:) No. 1260. Knoxville Water Company, *vs.* M. & A. of Knoxville. Demurrer of Def't to O. Bill. Filed Dec. 23, 1901. Henry O. Ewing, Clerk. Bill Costs. W. T. Kennerly, Aff. 25¢.

114 UNITED STATES OF AMERICA,
Eastern District of Tennessee, ss:

The United States of America to Mayor & Aldermen of the City of Knoxville, Tennessee, Greeting:

We command you, and every one of you, to appear before our Judge of our Circuit Court, of the United States of America, for the Eastern District of Tennessee, at Knoxville, on the *6th* day of *January* next, that being the Rule day to which this writ of Subpœna is returnable to answer to the Bill of Complainant of Knoxville Water Company .....
.....
.....
filed in the Clerk's Office of said Court, in the City of Knoxville on December 7th, 1901, then and there to receive and abide by such judgment and decree as shall then or thereafter be made upon pain of judgment being pronounced against you by default.

To the Marshall of the Eastern District, to Execute:

Witness: the Honorable Melville W. Fuller, Chief Justice of the Supreme Court of the United States of America, at Knoxville aforesaid, this 11th day of December in the year of Our Lord One Thousand Nine Hundred and One, and of our Independence the 126th.

HENRY O. EWING, *Clerk,*
By J. T. CARTER, *Dep. C'k.*

MEMORANDUM.—The above named defendant is hereby notified that unless it enters its appearance in the Clerk'- Office of said Court at Knoxville aforesaid, on or before the day to which the above writ is returnable, the complaint will be taken against it as con-
115 fessed, and a decree entered accordingly.

[SEAL.] HENRY O. EWING, *Clerk,*
By J. T. CARTER, *Deputy Clerk.*

(Endorsements:) Original. No. 1260. Circuit Court, United States. Eastern District of Tennessee. Knoxville Water Company, *vs.* Mayor & Aldermen of the City of Knoxville. Chancery Subpœna. Returnable to Rule day 6th day in January A. D. 1902,

Henry O. Ewing, Clerk. Issued, December 11, A. D. 1901, Henry O. Ewing, Clerk. Chas. T. Cates, Jr. Complt. Sols. Knox County. Filed Dec. 12, 1901. J. T. Carter, Deputy Clerk.

Received at Knoxville, Dec. 11th, 1901.
Executed in full as commanded by making known the contents of and by delivering a copy of this writ together with a copy of the bill to S. G. Heiskell, Mayor of the City of Knoxville at Knoxville, Knox County, Tennessee. This December 11, 1901—2.30 P. M.

A. G. MATTHEWS,
Deputy Marshall.

Marshall cost $2.00.

116 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee. In Equity.

No. 1260.

KNOXVILLE WATER COMPANY
v.
BOARD OF MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

117 *The Answer of the Defendant, the Board of Mayor & Aldermen of the City of Knoxville, to the Bill Filed Against it by the Knoxville Water Company, in the Above Entitled Cause.*

In answer to said bill the defendants says;

I.

Defendent admits that it is a municipal corporation, chartered under the laws of the state of Tennessee, located in Knox County in said state, and within the jurisdiction of this Court, It denies that plaintiff is a corporation. It admits that plaintiff did obtain a so called charter, a copy of which is filed as Exhibit No. 1. to the bill filed in this cause, but said instrument is void for the following reasons;—

1. There was no statute authorizing the granting of said so-called charter, It purports to be granted pursuant to Chap. 104 of the Acts of 1877 of the State of Tennessee. Said act is unconstitutional and void.

a. It violates Article II Section 17 of the Constitution of the state of Tennessee, in that it embraces two distinct subjects of legislation, and its body embraces a matter that is not covered by its caption.

b. It was not enacted with the formalities required by Article II, Section 18 of the Constitution of the State of Tennessee, as will appear from the journals of the two houses of said General Assembly.

2. Said so-called charter is void, even if said statute should be held constitutional:—

a. The fact, if such should be the fact, that leave was obtained from the City to operate plaintiff's plant was not certified by the

Mayor or Recorder upon the application for its charter and registered with it, as required by Section 2 of said Act. This will appear from an inspection of the copy of the charter filed as Exhibit No. 1 to the bill This omission renders the charter absolutely void and subject to collateral attack.

118 *b.* Said charter fails to set out upon its face, the necessary provisions and requirements made by said Act. It is void on this account, unless said provisions can be read, as matters of law, into the face of the charter.

II.

Answering such portions of plaintiff's bill as concern the relations and contracts of the parties, and stating the events in chronological order, defendants says:

1. In the year 1882, the date at which plaintiff obtained its said socalled charter, defendant was a municipal corporation, having several thousand inhabitants and possessing no other water supply than that afforded by springs, wells, cisterns, creeks and the Tennessee River. Defendant included within its limits at said date, only the first nine wards as they now exist and then existed, Defendant had the power under its charter and the laws of the State of Tennessee to make provision for a water supply through a system of water works to be erected directly by itself, or through a contract with some individual or company to supply itself and its inhabitants with water. Prior to 1882, it had taken some steps by the purchase of suitable property, looking to the erection of a system of water works. This purpose however, was abandoned about said date.

2. On the first day of July 1882, the defendant entered into a contract with the plaintiff for the construction and operation by the latter of a system of water works, within the City limits, to provide water for itself and its inhabitants. Exhibit No. 2. to the bill appears to be a correct copy of this contract. Under this contract defendant unwisely and improvidantly granted the exclusive franchise to plaintiff for the construction and operation of water works within the limits of the City, for the term of thirty years For this

119 very valuable franchise the defendant exacted of the plaintiff no compensation, whatever. By the term of this contract the City agreed to convey to the plaintiff at a bargain to the plaintiff the property which it had accquired for the purpose of erecting water works. It likewise agreed to pay plaintiff $50.00 each, per annum, for at least Seventy five hydrants, and to pay the taxes of said Company for the term of five years. Said rental now, and for some years past, amounts to about $12000.00 per annum.

The averments on page four of the bill, purporting to set out in *haec verba,* certain terms and stipulations of this contract, do not set out the contract either in *haec verba* or according to its true meaning. It is not true, as there averred, that the plaintiff was to furnish the defendant water for any of its uses, free of charge. The water to be taken by the City came through the hydrants, upon which the city paid an ample rental. Under this contract, the City after the expiration of 15 years from its date, reserved the right to

purchase said water works, at a fair price to be fixed by mutual agreement or by arbitrators. Defendant does not admit that plaintiff performed said contract, according to its terms.

3. Prior to 1891 two other municipal corporations known as North Knoxville and West Knoxville had been erected and organized. The territory embraced in these two municipal corporations adjoins that embraced within the corporate limits of this defendant.

In the year 1891 Wheeler & Parks, a co-partnership, interested in the plaintiff Company in this case, entered into a contract with the corporation of North Knoxville to supply it and its inhabitants with water, Exhibit No. 3. to the bill appears to be a correct copy of said contract. Wheeler & Parks assigned this contract to t-e plaintiff Company on the 17th of November 1893.

In the year 1891-2, the Lonsdale Beaumont Water Company was organized and chartered, to supply water to the town of West
120 Knoxville and its inhabitants. Exhibit No. 4. to bill appears to be a correct cpoy of its charter, and Exhibit No. 5. appears to be a correct copy of the contract made between said Water Company and the Town of West Knoxville on the 17th. of September 1892.

Both of said municipal corporations, as well as this defendant had power under their charters and the laws of the State of Tennessee to make provision for a water supply for themselves and for their inhabitants.

4. In 1897 the three municipal corporations, towit: Knoxville, North Knoxville, and West Knoxville were consolidated. This was done pursuant to Chapter 323 of the Acts of 1897. The consolidated corporation obligated itself to carry out all valid and lawful contracts of the component corporations. It does not admit that the contracts between North Knoxville and Wheeler & Parks, and between West Knoxville and the Lonsdale Beaumont Water Co., were valid and lawful contracts in all respects, and reserves the right to make any questions that it may deem proper as to their validity.

5. In 1899 the plaintiff Company and Lonsdale-Beaumont Water Company, were consolidated, or rather the Lonsdale Beaumont Water Co., became the property of the plaintiff, the Knoxville Water Company. Exhibit No. 7. to them bill appears to be a correct copy of the ordinance under which this consolidatoion or merger took place, and of the *ex*ceptance of the provisions of the ordinance by the plaintiff Company. The proceedings in relation to this consolidation or merger are not fairly or correctly set forth in the plaintiff's said bill. This consolidation was a matter that was not sought by the defendant, but by the plaintiff Company. The chief object of the plaintiff in obtaining said ordinance was to obtain a release from the obligation that it had *o*originally *pal*ced upon itself under its contract with the City of Knoxville, not to burden its properties with a mortgage or bonded indebtedness for any amount ex-
121 ceeding $150000.00 The chief benefits of said proceeding accrued to the plaintiff, as will appear from an inspection of Exhibit No. 7 to the bill. The City simply reserved rights that

already existed, and acquired no new rights under said consolidation ordinance.

Moreover, said consolidation was fraudulently obtained from the defendant by mis-representation and concealment of material facts by the plaintiff. By section 5. of the consolidation ordinance, Exhibit No. 7. to the bill, it was provided, That in order that the con*slo*idation herein before provided for may be effected and to enable the Knoxville Water Com*ap*ny and the Lonsdale-Beaumont Water Company, to fund their existing debts and obligations, and to, provide funds to improve the consolidated plant and to make *e*extensions thereto and in considerations of the benefits to be deriv*r*d therefrom by the City of Knoxville and its inhabitants, the Knoxville Water Company shall guarantee or fund the existing debts of said companies, and said Knoxville Water Company is hereby released from that provision of its contract with the City of Knoxville, dated July 1st. 1882, as aforesaid, limiting this indebtedness to $150,000.0- and such provision or limit in said contract is hereby abrogated and annulled provided however, that not more than $800,000.00 of bonds shall be issued, except to provide funds for additions to or improvements of the plant and property of said Knoxville Water Co., and for any bonds so issued said Knoxville Water Comp-ny, shall file with the Recorder of the City of Knoxville a sworn certificate showing the actual costs of such additions or improvements for which bonds may be issued.

This consolidation ordinance was passed by the City Council upon the representation of Plaintiffs' agents, and upon the belief thereby induced, that the plaintiff had collected and exhausted its capital stock, and had incurred a large *bona fide* indebtedness, when the facts were otherwise — It is noticeable that plaintiff has not stated in its bill the amount of its capital stock. However, its
122 schedules returned to the Tax Assessor and sworn to by its Treasurer Elbert Wheeler, for the years 1900 and 1901, copies of which are made Exhibits Nos. 1 and 2, to this answer show that the plaintiff Company was capitalized at $1,250,000.00, and that $940,000.00 of this stock was paid up, thus leaving $310,000.00 of the subscriptions to its capital stock unaccounted for.

The plaintiff's charter, Exhibit No. 1 to the bill provides upon its face that: That the amount of unpaid stock due from a subscriber to the corporation shall be a fund for the payment of any debts due from the corporation and the transfer of stock by a subscriber shall not relieve him from liability on his subscription, until the full amount thereof shall have been paid..

Upon information since received and upon belief defendant denies that the $940,000.00 stated in said schedules to have been paid up was ever in fact paid up, or any considerable part thereof, and that therefore, the apparent indebtedness of the plaintiff Company is not *bona fide,* and that the representation of the Company that it owed such an amount was a gross fraud upon the City whereby it obtained the release of the limit upon its binded indebtedness. This limit was of great value to the City, on account of the option that it held for the purchase of the plant. Defendant charges that the

purpose of the plaintiff in thus deceiving the City and obtaining permission to heavily burden its property with mortgages, which it has since done, was to place obstructions in the way of the City's purchase. In this scheme plaintiff has been thus far successful.

In another respect defendant was imposed upon by the plaintiff in the matter of granting leave for the consolidation or merger
123 of said Companies. Under the statutes of Tennessee, Shannon's Code, Section 2506, consolidation or merger of Water Companies can be effected only by leave of the municipality wherein they are situated, and this leave cannot be given or become effective, if the Companies are competing, Defendant avers that the Lonsdale-Beaumont Water Co. was a competing Company with the Knoxville Water Co. and that one of the chief objects of the purchase of the Lonsdale Beaumont Water Co., was to get rid of this competition and thereby enable plaintiff to exact higher rates of water consumers. Defendant therefore denies the validity of said consolidation or merger.

Defendant denies that the conveyance made by the Lonsdale Beaumont Co. to the plaintiff in the effort to consolidate the two companies was properly registered in the office of the Secretary of State, by reason of the fact that it was acknowledged before a Notary Public, who had no authority to take acknowledgments for such a conveyance.

Defendant denies the legality or validity of the transfer of the North Knoxville Contract by Wheeler & Parks to the plaintiff Company. The truth about this transaction is that it was done in fraud and evasion of the law. Wheeler & Parks were practically the owners of and had absolute control then and perhaps ever since of the Knoxville Water Company. They were in fact an- in law The Knoxville Water Co. The Knoxville Water Company, however, could not erect a plant in the municipality of North Knoxville under its charter, because of the fact that Section 2 of Chapter 104 of the Acts of 1877, under which its charter was granted, requires that it shall have the consent of the municipality certified by its Mayor or Recorder upon the application for the charter, and that such certificate shall be registered with the charter. It was
124 to evade thie mandatory and beneficial provision of the statute that Wheeler & Parks made the contract with North Knoxville, and attempted to assign the benefit of the same themselves, under the name of the Knoxville Water Company. Defendant denies the validity of said assignment and puts in issue the title of the Knoxville Water Co., to the North Knoxville plant and contract and likewise to the West Knoxville plant and contract.

Defendant*n* has no doubt that Wheeler & Park*d* accomplished the further object of unloading the North Knoxville contract upon the Knoxville Water Company, at an excessive and exag-erated price, to the prejudice of minority stockholders and in advancement of its scheme to embar-ass the City of Knoxville in taking advantage of its option for the purchase of the water plant, and to the prejudice of the Water consumers of the City.

III.

Answering those aspects of the bill pertaining to the defendant's power to regulate the water rates to be charged by the plaintiff, and the rates actually prescribed and their reasonableness or unreasonableness, defendant says:—

The defendant's right to regulate the rates to be charged by the plaintiff, unless the same has been released by valid contract, is unquestionable. It is a conditi-n of the very existence of the plaintiff Company. The Act of the Legislature, under which it obtained its so-called charter, provides as follows;—"and this act is in no way to interfere with or impair the police or general powers of the corporate authorities of such city, town or village *and such corporate authorities shall have power by ordinance to regulate the price of water supplied by such Company.*"

125 Acts of 1877, Chapter 104, Sec. 2.

Defendant does not admit that it possessed the power under the general law or under this statute to bargain away the police power affecting the regulation of water rates even if it had undertaken to do so, but defendant has not undertaken to make any such release. An inspection of the defendant's contract with the plaintiff, as well as of the other contracts with North Knoxville and West Knoxville will disclose that the provisions therein relating to water rates simply prescribe that the Water Company shall not charge exceeding the rates therein stated. In other words the contracts fix the maximum rate, and do not bargain away the City's power to regulate rates in a reasonable manner.

Until recently, the defendant's power to regulate water rates had not been seriously contested by the plaintiff. The matter however, has been put at rest by a decision of the Supreme Court of the State of Tennessee, construing the statutes and contracts fixing the rights of the parties and sustaining the ordinance regulating the plaintiff's water rates, which has again come in question in this suit.

Defendants admit, that the plaintiff in April 1895 promulgated a schedule of rates and charges for the use of water, a copy of which is made Exhibit No. 6 to the bill. This as appears from its date was done prior to the consolidation of the three municipalities and of the plaintiff Company with the Lonsdale-Beaumont Water Co. It seems that prior to 1895 the plaintiff had escaped regulation by the City. At any rate it had escaped any effectual regulation. There had however, been strong protests against the unreasonableness of its charges for water. This lead to the promulgation of the schedule rates embodied in Exhibit No. 6 to the bill. It is

126 not very material whether the plaintiff conceded these rates, with or without pressure from the City authorities, or from a sense of justice and fairness, or from the pressure of the protests made by water consumers. This schedule contained such concessions as placated the public for a time. Defendant denies that they were reasonable, even under the situation that then existed but if reasonable then, they could not be reasonable now inasmuch as

there has been a large increase in the population of the City, and in the consumption of water, and in the receipts of the plaintiff Company without any corresponding addition to its expenses.

It is true that the city about the same time passed an ordinance fixing meter rates, and it is probably true that the meter rates thus fixed by the City ordinance were substantially the same as those fixed by the defendant's said schedule. In fact defendant believes that the schedules and the ordinance were the result of negotiations between the City and the Water Company by virtue of which the water Company was required and prevailed upon to reduce its water rates. In fact the rates fixed by this ordinance was a concession of the City's right to regulate rates. It is not true that the City never sought or attempted to enforce its said ordinance of 1895 regulating meter rates. It is true, however, that the plaintiff has never undertaken to violate it to the knowledge of the City authorities or of the water Consumers. Otherwise proceedings would have been instituted to compell its observance.

The plaintiff makes repeated reference in its bill to a contract made on the 19th or 20th of October, 1899, relating to or fixing water rates. This reference is to the consolidation ordinance relating to the consolidation or merger of the Lonsdale Beaumont Water Co., with the plaintiff Company, which is made Exhibit No. 7 to the bill. An examination of that ordinance will disclose that there is no agreement as to rates therein made, except the
127 provision to preserve existing maximum rates in the following words, to wit:—

And provided further that said consolidated Knoxville Water Co., succeeding as aforesaid to all the rights, privileges and franchises of both Companies, shall also furnish to the people living in the remaining wards of the City of Knoxville other than said 10th ward, or who may hereafter live in said remaining wards, or such wards as may hereafter be added to the City of Knoxville filtered and wholesome water, or water equal in quality to the filtered water now being furnished by said Knoxville Water Co., at a maximum rate not exceeding that fixed by the contract between the Knoxville Water Co., and the City of Knoxville dated July 1st, 1882, and the schedule of rates and charges now in force and operation by the Knoxville Water Co.

It was no part of the purpose of said ordinance to fix water rates, and only an incidental provision was made to preserve the maximum rates already fixed by previous contracts. The matter of rates was not involved in that discussion that lead up to said consolidation ordinance and was not seriously considered in that connection. However, the provision above quoted could have no effect upon the questions involved in this suit.

But in January 1900 the question of water rates did come under serious discussion. The complaint against the excessiveness of the rates charged by the plaintiff Company had become almost universal, and an ordinance was introduced in the City Council in January 1900, averred in the bill, seeking to regulate, and providing for the regulation of water rates to be charged by the plaintiff.

It is not true that this ordinance was introduced for political purposes. But it is immaterial whether it was or not. It is
128 not material at whose instance it was introduced. The truth is, that it was introduced at the command of the whole people of Knoxville, by their representatives in the City Council. It is not true, as stated in the bill, that the City Council refused and declined to pass this ordinance, on the contrary it was passed by unanimous vote of the City Council on two readings, and was only prevented from becoming effective by a dissolution of that Board of Mayor & Alderman, by reason of the expiration of their terms of office, and the election of a new board. The new Board of Mayor and Aldreman instead of passing said ordinance on the third reading, introduced a new one, in which doubtless there may have been some changes and alterations, which was finally passed on the 27th day of July 1900. As this ordinance was subsequently repealed, and the ordinance, the validity of which is contested in this case, was enacted in its stead, the former ordinance becomes an immaterial matter and issue. However it may be stated by way of explanation that after the ordinance of July 27, 1900 had been passed and approved, and the plaintiff had refused to comply with its provisions, some prosecutions were instituted by the City against the plaintiff, seeking to recover the penalties provided by the ordinance for its violation. The defense was made that the ordinance was void for uncertainty, in that it failed to state that the rates specified were annual or otherwise, and for this reason the ordinance was repealed and the suits brought under it were dismissed, and a new ordinance passed on March 30, 1901, which was a literal copy, with the words "per annum" added, of the ordinance of July 27, 1900. A copy of the ordinance of March 30, 1901 is made Exhibit No. 8 to the bill.

Under this last ordinance suits were brought against the Water Company to enforce tye penalties for its violation in charg-
129 ing excessive water rates, and divers defenses were made to these suits, to be more fully stated in another connection. Among other defenses it was insisted that the ordinance was void because it had been passed at a special meeting of the Council, at which all the Alderman were not present, or had not been notified, and that it had been published on Sunday. Out of abundant caution and in view of the possibility that the Courts might sustain these contentions and set aside the ordinance without passing upon the merits of the question, the Board of Mayor & Alderman passed the ordinance of Oct. 4, 1901, which was a literal copy of the ordinance of March 30, 1901. The Supreme Court of Tennessee, however sustained the last named ordinance and hence the ordinance of Oct. 4, 1901 or the manner of its passage is of no consequence.

Defendant denies that any one of said ordinance- was passed arbitrarily, or without an effort on the part of the defendant's Board of Mayor & Alderman to ascertain whether the rates therein fixed were reasonable or not. Defendant denies that said ordinances were passed without due and legal notice to the plaintiff, and without an opportunity to be heard. Defendant denies that any of said ordinances were passed without proper and legal investigation of

the condition of the plaintiff company, and the effect of the rates therein fixed upon its business, so far as this could be done, without the co-operation of the plaintiff, which was refused.

It is not true that defendant did not attempt to ascertain the effect of the meter rates fixed in said ordinance. It is true that defendant did not resort to the method suggested in the bill of counting the number of fixtures, through which water was furnished by the plaintiff Company to the citizens of Knoxville. Such information, had it been obtained at great cost and trouble, would have
130 been but little benefit. Defendant did resort to more effective methods for informing itself as to the reasonableness of its rates embodied in said ordinance.

While the ordinance of July 27, 1901, which is identical in the rates fixed, with the ordinance of March 31, and Oct. 4, 1901, subsequently passed, was pending before the Water Committee of the City Council, the Mayor of the defendant, Hon. S. G. Heiskell, on July 16th, 1900, addressed to that committee a letter, a copy of which is made Exhibit No. 3 hereto, suggesting to and directing the Committee to commun-cate with the plaintiff Company and ascertain, as a basis for their action and report upon said ordinance, the followin*t* facts:—

1. As to the Company's bonded debt and the interest thereon.
2. Its gross income.
3. Its operating expenses including all salaries.
4. The valuay*i*on it fixed upon its plant.
5. The original cost of its owners, Messrs. Wheeler & Parks.
6. The kind of improvement and the cost of the same, since Messrs. Wheeler & Parks have been the owners.

On the same day July 16, 1900, Alderman A. S. Birdsong Chairman of the Water Committee of the City Council, in compliance with the Mayor's request and direction, addressed a letter to the plaintiff Company, making the above named inquiries, stating that the information requested was desired to enable the Committee and the City Council to pass upon the reasonab-eness of the rates embodied in said ordinance, and asking a reply. A copy of the letter of Alderman Birdsong is made Exhibi*B* No. 5 to this answer.

This letter of Alderman Birdsong was delivered to the Knoxville Office of the plaintiff Company, and both that letter and the Mayor's said letter were published in the Knoxville newspapers, and were thereby brought to the attention of all parties concerned.
131 On the 17th of July the Knoxville Water — through F. C. Kimball, its superintendent addressed a letter to Mr. Birdsong, acknowledging receipt of his said letter, and replying that the information desired was in the possession only of the Treasurer, General Elbert Wheeler of Boston, Mass. and that he had forwarded Alderman Birdsong's communication to him for reply. The original of this last letter is made Exhibit No. 6. to this answer.

The plaintiff Company, through Elbert Wheeler, Treasure- replied by a letter to Alderman Birdsong, dated July 20, 1900 a copy of which is made Exhibit No. 7 to this answer. In this letter Treasurer Wheeler refers to the fact that he has seen the said letter of

the Mayor, as well as that of Mr. Birdsong. In substance this letter denies or at least doubts the City's right to regulate water rates suggesting that "The Commit-ee would have no adequate basis for reaching equitable conclusions by having the information asked for in Inter-ogatroy No. 1." He answers inter-ogatories Nos. 2 and 3 by saying. That the gross income of the Company is not sufficient, after paying necessary operating expenses, including salaries, which are merely nominal in amount to its executive officers, to afford or pay a reasonable return upon all of its several forms of capitalization." He says that "any reply to inter-ogatory No. 4 would be only an expression of personal opinion, to which any one might and doubtless with great propriety will take exception. To the 5th. inter-ogatory he replies, it is impossible for me to answer, having no knowledge thereof. *To* the 6th inter-ogatory he says "is practically answered by the preseeding statements, except as to the cost of improvements, which we respectfully submit is immaterial in
view of the declaration made in answering inter-ogatories 2
132 and 3, said costs being included in the capitalization, from
which no adequate or reasonable return has thus far been possible of realization."

It will thus be seen that the Water Company was afforded the fullest opportunity to give the information that would have enabled the City to pass intelligently upon the reasonableness of its ordinance. It will be as clearly seen from this correspondence that the Water Company evaded and avoided giving any information that could or would be of the slightest benefit to the City, and for the obvious reason that such information would not have been for its own benefit.

The Water Company and the City Council, notwithstanding this rebuff of the plaintiff Company, sought information from other sources before taking final action. They had before them the fact that this plaintiff could not, by the *trems* of its original contract with the City burden its plant with more than $150,000.00 of bonded indebtedness. They had before them the fact that this Company was paying to the City of Knoxville taxes upon assessments of $200,000.00 for the year 1900, of $165,000.00 for t-e year 1899. of $165,000.00 for the year 1898, of $160,000.00 for the year 1897, and of $150,000.00 for the year 1896. A certified statement of these amounts from the City*s* Comptroller's office, showing the above assessments is made Exhibit, No. 8 hereto.

The Water Committee of the City Council, or its chairman corresponded extensively with otner cities and towns, with reference to the water rates in operation therein, and the conditions under which said water was furnishe- The results obtained through this correspondence were published in the Knoxville news papers, before the
passage of said ordinance of July 27, 1900, and came to the
133 knowledge of the plaintiff Company's resident officials. That
part of the said publication pertinent to the present inquiry is as follows:

"Knoxville, Net family per year, $6.00, Net family per 1000 galons, 25¢; factory rate per 1000 galons, 7¢.

Allentown, Pa. Net family per year, $3.50.

Aurora, Ill. Net family per year, $4.00. Net family per 1000 gallons 8¢. factory rate per 1000 gallons, 5¢.

Augusta, Ga. Net family per year, $5.00; Net family per 1000 gallons 10¢; factory rate per 1000 gallons 10¢.

Akron, Ohio. Net family per year $5.00.

Canton, Ohio. Net family per year, $4.50; Net family per 1000 gallons 15¢; factory rate per 1000 gallons 3½¢.

Elgin, Ill. Net family per year $4.00 net family per thousand gallons 14¢; factory per year, $4.50.

Des Moines, Ia. Net family per year, $4.00 Net family per 1000 gallons 30¢. factory rate per 1000 gallons 15¢.

Evansville, Ind. Net family per year, $4.50.

Jackson, Tenn., Net family per year, $6.00, Net family per 1000 gallons, 10¢. factory rate per 1000 gallons 5¢.

Louisville, Net family per year, $2.40. net family per 1000 gal-ns, 14¢; factory rate per 1000 gallons, 6¢.

Lima, Ohio. Net family per year $5.00; net family per 1000 gallons, 20¢; factory rate per 1000 gallons 8¢.

Saginaw, Mich. Net family per year $4.00 net family per 1000 gallons 11¢. factory rate per 1000 gallons 6¢.

St. Joseph, Mo. Net family per year $5.00.

Ft. Wayne, Ind., Net family per year, $3.60; net family per 1000 gallons 10¢. factory rate per 1000 gallons 6½.

Newport, Ky. Net family per year, $5.00 net family per 1000 gallons 10¢; factory rate per 1000 gallons 7¢.

134 Roanoke, Va., Net family per year —. Net family per 1000 gallons, 25¢; factory rate per 1000 gallons 15¢.

Davenport, Ia. Net family per year, $6.00; net family per 1000 gallons 20¢, factory rate per 1000 gallons 15¢.

Atlanta, Ga. Net family per year, $7.20; net fam*ily* per 1000 gallons, 10¢; factory rate per 1000 gallons 8¢.

Mobile, Ala. Net family per year, $10.00; net family per 1000 gallons, 50¢. (Which has since been greatly reduced.)

Quincy, Ill. Net family per year —; net family per 1000 gallons, 20¢.

Indianapolis, Ind., Net family per year $2.20; net family per 1000 gallons, 5¢; factory rate per 1000 gallons 5¢.

Chattanooga, Tenn. Net family per year, $6.00; net family per 1000 gallons, 20¢.

No official of the plaintiff Company contested or offered to contest the accuracy of the above information, although they very well knew that the same was being used as a basis for the City's action.

It is proper to suggest in this connection that a comparison between the water rates in cities like Atlanta and Nashville, where the City itself owns and operates its own water works, afford no criterion for water rates in cities like Knoxville, where the City and its inhabitants are supplied with water by a private or quasi-public corporation. In cities of the former class the water rates is sometimes made the means of raising revenue. It is a matter of comparative indifference whether the rate is high or low. If it is high the excess goes

from the public Treasury, if it is low the deficit is supplied from the public revenues. In any event the public and not the individual gets the benefit of the rates. In cities of the latter class any excess in the water rates is taken unjustly from the public for the bebefit of the *u*ndividuals, and hence the rates under the law, must be reasonable in order to be just.

Defendant however denies that the water rate of Nashville is higher than that of Knoxville, although the Nashville rate produces considerable revenue that goes into the public treasury. Defendant denies that the Chattanooga meter rate is higher than that of Knoxville under the new ordinance. Defendant denies that the average rate of Chattanooga is higher than that of Knoxville. However Knoxville — account of its compactness ought to be able to stand a lower rate then Chattanooga. There are other advantages in favor of cheaper rates for Knoxville than for Chattanooga. This appears from the fact, that while the Knoxville plant, as stated in the bill incurs annually about $35000.00 of expenses for operating its plant, the Chattanooga plant incurs as shown in the special master's report in Your Honor's Court in the Chattanooga case, about $50,000.00 annually for operating expenses.

Besides the aforesaid investigation, the Chairman of the Water Committee, Alderman A. S. Birdsong, proposed to make a personal investigation of the books of the Water Co., if permitted to do so, and if the statement of the officials of the plaintiff Company were found to be true upon such examination, to recommend the rejection of such ordinance. This proposition was rejected by the plaintiff for reasons to- obvious to need statement.

Not only so but the attorney and official of the plaintiff Company were invited to appear before the members of the City Council, assembled specially for the pu*r*pose, and they did act*u*ally appear at such meeting, and were heard at length, and as long as they desired, upon the question of the power of the City to pass said ordinance, its reasonableness etc.

Thus it appears that the ordinance of July 27, 1900, was passed after the fullest and most deliberate consideration of the matter by the City Council, and the subsequent ordinances were mere reenactments of this ordinance. It appears moreover, that i*B* was a vain thing to ask or demand information from the plaintiff Company or its officials.

Defendant denies that the rates fixed by the ordinance of March 31, 1901, are, in any wise, unreasonable, and insist that in view of the above correspondence and facts, that the plaintiff Company is estopped to deny their reasonableness.

Defendant denies that the rates fixed in said ordinance have the effect of reducing the *per*-existing rates from 20% to 33%, as stated in the bill. The average reduction of rates as prescribed by said ordinance is about 20%.

Answering further in regard to the reasonableness of the rates fixed by the ordinance of March 30, 1901, Defendant is advised that under the decisions of the Courts and especially of this Court, in the Chattanooga case, that a rate is reasonable if the Company can and

does realize and income sufficient to meet its operating expenses, together with 2% sinking fund, and 6% interest computed upon the fair value of the plaintiff's property, at present used for the public convenience, in no event, however, to exceed the actual investment.

It is worthy of remark in this connection that the plaintiff, not only refuse- to express an opinion as to its property and its value in the correspondence with the Chairman of the Water Committee, already quoted, but has ut-erly failed to suggest the value of
137 the same in its bill in this case.

This is the controlling fact in ascertaining the reasonableness of rates, and is entirely ommit-ed from the bill. The Court and Council are left to guess at this value, or to compute it upon the incidental statements of the bill. It is stated in the bill that plaintiff's plant cost more than $1,000,000.00 dollars. Defendant denies this statement with emphasis. This is not equivalent to stating that the property is worth $1,000,000.00. From other allegations of the bill it seems to be conceded that there has been much loss and depreciation of the property in value, and that much of the investment hac been lost in that way. It does appear from the exhibits to this answer that the property produced by this alleged investment of $1,000,000.00 has paid taxes on a valuation ranging from $150,000.00 in 1896 to $275,000.00 in 1901. One of two things must be true, that the Company is getting the protection of the laws of the State of Tennessee and of this defendant, without paying for the same, or its property is worth much less than the amount that it has invested in it—in fact only 25% of the amount.

Taking the tax assessment as a basis of value of plaintiff's property, and in as much as plaintiff complains of this assessment as being oppressive it would seem to be a just basis, we have this result on the figures found in plaintiff's bill in this case:

For year ending March 31, 1901, Receipts.....		$88649.41
Operating expenses	35775.89	
2% Sinking fund, and 6% interest on the value thus fixed, being the rule addopted in the Chattanooga case, 2%.....	$4000.00	
6%	12000.00	
Making a total for operating expenses interest and sinking fund of.....		$51775.89
Leaving a net balance of.....		36873.52

138 If the property be placed at double the assessment for that year, still there would be a net balance of $20873.52. And placed at triple the assessment of that year there would still remain a balance of the Company's earnings amounting to $4873.52.

It needs no argument to show that rates which produce this result or- not just and reasonable to the consumers and tax payers.

Defendant, however, denies the statements of the bill that the necessary operating expenses of the plaintiff Company amount to $35775.89;—said sum in defendant's opinion is largely in excess of

the actual sum required. Defendant denies that statement of the bill that plaintiff only derived *only* $88649.41 annually as revenue from the operation of its plant. It avers that a sum largely in excess of said amount is realized.

Defendant denies the statement of the bill t*aht* $20,000.00 *oer* annum is required to restore the ordinary depreciation of the plant, and denies the further statement that $30,000.00 per annum is required to res-ore special depreciation or replacement. Defendant does not understand what is me-nt by special depreciation or replacement, but assumes that it means some sort of permanent improvement of the plant, and does not in any case come out of the earnings, but goes to the account of investiment.

Defendant not only denies the statement that $1,000,000.00 has been invested in said plant, but it denies that the sum realized from the sale of the bonds, stock subscriptions, and from the creation of a floating indebtedness, as alleged in the bill, was invested in the plaintiff's plant, and avers that a large amount of it was diverted directly or indirectly to the benefit of Wheeler & Parks, and
139 perhaps other majority stockholders in the plaintiff Company.

It appears, as before stated, that the plaintiff Company was capitalized at $1,250,000.00. This stoc*h* should have been subscribe*r* and paid in, and was ample in amount to meet every obligation of the Company, without creating any mortgage or debenture bonds, or the sale of any preferred stock, or the creation of any floating indebtedness. It has been only in consequence of gross, and as defendant bel*e*ive fraudulent mismanagement, that it has been necessary to create any indebtedness of said Company.

Defendant avers that it has been the policy of the plaintiff and of Wheeler & Parks, its controlling stockholders from the inception of the corporation down to the present time to load the concern with indebtedness, with the view of embarrassing the City in exercising its option, or to compe*ll* the defenda*bt* to take its property at an exaggerated an- exorbitant price. As defendant bel*e*ives that they have persistently withdrawn and pocketed the earnings of the Company, there by compelling the creation of the bonded debts, and the sale of preferred stock and of $300,000.00 of floating indebtedness. In fact defendant doubts whether the majority stockholders of the plaintiff Company have ever paid any considerable sum into its capital, and that what constitutes the assets of the Company to-day, consists of the valuable franchises donated to it by the City of Knoxville, and such funds as have been paid in by minority stockholders or borrowed upon mortgages of the Company's property.

There is strong evidences of this found in the recent mortgage made by the plaintiff upon its property, franchises, etc., and placed upon record, amounting to $1,000,000.00, in which it provides for the sale of bonds therein secured for the making of improvements.

Defendant denies that the sale of bonds, either debenture
140 or mort*g*age bonds, or the sale of preferred stock, was necessary at any time. Defendant further denies that losses in-

curred by such sales are chargeable to the investment account in considering the question of reasonableness of the rates charged, or prescribed by the defendant.

These losses must have been very considerable, as will appear from the following statements: It is only claimed that $1,000,000.00 was paid into the investment. The bill and tax schedules show that the following assets were received by the Company. $940,000.00 on stock; $150,000.00 on mortgage bonds; $85,000.00 on debenture bonds, $300,000.00 on floating indebtedness, making in all $1,475,000.00, leaving unaccounted for $475,000.00. In addition to this there was $310,000.00 of the capital stock that seems never to have been paid in.

Defendant denies that Wheeler & Parks, the majority stockholder-, have paid for their stock in said corporation, and it bases this denial largely upon the following evasive statement of the bill, to-wit: "The outstanding stock of your orator, exclusive of the aforesaid preferred stock, on March 31, 1901, amounted to $654,000.00, which represents large amounts paid into your orator by the holders of the shares of stock, which have cost *many* of the holders of the *principal part* of the stock from $40.00 to $50.00 per share."

Defendant denies all improper motives in the passage and enforcement of said ordinance. It denies that said ordinance is unjust or oppressive, and avers that it is essential for the protection of the water consumers of the City. Defendant denies that all parts of the plaintiff's property is now used or available for use, for the public benefit, and insists the value of such portions of its property shall be eliminated from the investment upon which it is entitled to a return.

141 Defendant denies that any amounts paid by the defendant Company, in excess of the value of the property, to enable it to absorb the Lonsdale-Beaumont Water Company, for the purpose of avoiding competition of that Company, shall enter into the investment upon which the plaintiff is entitled to a reasonable return. Defendant denies that any amount paid in excess of its just value, by the plaintiff Company to Wheeler & Parks for the North Knoxville contract shall enter into the amount of investment, upon which it shall be held entitled to reasonable return.

Defendant denies the statement of the bill that plaintiff's rentals, under the new ordinance, would have been reduced for the year ending March 31, 1901, by about $20,000.00, and it denies that the further statement that this reduction will be further increased by reason of the larger number of services that are becoming metered. The fact is that the defendant is on its own account without the consent and against the wishes of the water consumers, and since said ordinance was passed, putting in a very large number of meters, thus indicating that it does not fear any loss on that account.

As tending further to show the exaggeration of the plaintiff's statement about the loss that it will sustain by the operation of the new ordinance, it is pertinent to state that the rates fixed by the new ordinance are higher, in many cases, than those that are fixed by the Lonsdale-Beaumont contracts, and now charged by the plaintiff

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Company, in that part of the territory of the defendant known as the West Knoxville, or the tenth ward.

Defendant does not admit, that under the most recent intimation of the U. S. Supreme Court, the plaintiff being a *quasi* public corporation, performing a public service, can complain of the reasonableness of any rate of compensation that may be fixed by the law for such service.

142 Quoting the language of Mr. Justice Brewer in a recent case:—"If in such a case an individual is willing to undertake the work of the state, may it not be urged that he in a measure subjects himself to the same rules of action, and that if the body which expresses the judgment of the state, believes that if the particular services should be rendered without profit, he is not at liberty to complain? While we have said again and again that one volunteering to do such services, cannot be compelled to expose his property to confiscation, that he cannot be compelled to submit its use to such rates as do not pay the expenses of the work, and therefore create a continually increasing debt, which ultimately works its appropriation, still is there not force in the suggestion that as the state may do the work without profit, if he voluntarily undertakes to act for the state, he must submit to a like determination, as to the paramount interests of the public."

Defendant denies that the plaintiff in any event is entitled to 6% return upon its investment—6% being in excess of the usual return or profit yielded by invested capital under existing conditions. The plaintiff Company floats its own bonds at 4½ per cent., and many forms of securities are floatable at from 3% to 5%, at par, or even at a premium.

IV.

The defendant pleads and relies upon the plea of *res adjudicata*, as a bar to this suit, and to all of the relief sought in this cause. This plea is based upon the following facts:—

After the ordinance of March the 30, 1901, had gone into effect and had been violated by the plaintiff Company the defendant in this case brought suit before its recorder to recover the

143 penalty prescribed by the ordinance for its violation. This suit was determined in favor of the City, and the plaintiff Company appealed to the Circuit Court of Knox County, Tenn. In said Circuit Court, the plaintiff Company, by its attorney, made defense by written pleadings. These pleadings cover four pages of typewritten matter, and set up divers defenses to-wit:—not guilty, that the said ordinance violated the constitution of the U. S. in that it impaired the obligation of the plaintiff Company's said contracts with the City; that said ordinance was void, it violating the Water Company's contracts with its customers; that the ordinance was void because it imposed an excessive penalty; *nil debit*: and lastly that the ordinance was unreasonable and oppressive. The third plea, which makes and presents the present question involved in this cause, is in the words and figures following to-wit:—

III.

"And for further plea in its behalf the defendant Knoxville Water Company says that the ordinance claimed by plaintiff to have been passed and approved on March 30, 1901, being the same ordinance referred to in the warrant of the Recorder and sought to be enforced against this defendant, is invalid because it is oppressive and unreasonable in that:

1st. Under and by two certain contracts and agreements duly and legally entered into and executed by the plaintiff and defendant on the first day of July, 1882, and on the 20th, day of Oct., 1899, respectively, certified copies of which are shown to the court as Exhibits A. and B. to defendant's second plea herein,—the defendant being unable to produce the originals,—the plaintiff hath the right
144 to purchase all the property, rights, franchises and privileges of the defendant, upon a valuation and appraisal thereof to be made by a board of Appraisers to be chosen by said plaintiff and defendant who shall determine the price to be paid by the plaintiff by taking into consideration all the rights, privileges, franchises, easements, and other properties belonging to the defendant, including the right to charge and collect from its consumers the reasonable and just schedule of rates provided in said contracts, which constitute a material part of said contract and were intended to be considered by said Board of Appraisers, in determining the value of the plant and property of the defendant, and the plaintiff, by said ordinance of March 30th, 1901, seeks to depreciate and does depreciate the value of the property of the defendant to the end that said plaintiff may acquire and purchase the same below and under its real value.

2nd. And said ordinance of March 30, 1901, is further unreasonable and oppressive in that it permits plaintiff, without the consent of the defendant, to arbitrarily reduce the reasonable and just price which said plaintiff under and by its said contracts of July 1, 1882, and October 20, 1899, agreed to pay to plaintiff for water furnished by it to said plaintiff, and which defendant since the execution of said contracts has been, and still is engaged in, furnishing to the plaintiff.

3rd. Said ordinance is further oppressive and unreasonable because under and by its terms and provisions defendant is prevented from contracting and entering into agreements with its customers for reasonable and just prices for water sold by the defendant to said customers and patrons and under a heavy penalty prevented from demanding or collecting such charges as it may enter into with its patrons for water to be furnished to them by defendant.

4th. And said ordinance of March 30, 1901, is further oppressive and unreasonable because under its terms and provisions de-
145 fendant will be deprived of its property and liberty without due process of law.

Wherefore said ordinance is void and not enforceable against this defendant.

(Signed) "CHARLES T. GATES, JR.,
Attorney."

Upon the trial in the said Circuit Court judgment was rendered against the City, and an appeal taken to the Supreme Court of the State. In the said Supreme Court the judgment of the Circuit Court was reversed and final decree entered in favor of the City against the plaintiff Company, sustaining said ordinance and giving judgment against the Water Company for the penalty sued for and costs.

The defendant relies upon the judgment of the Supreme Court of the State of Tennessee in said cause of the Mayor and Alderman of the City of Knoxville *v.* The Knoxville Water Co., as a complete bar to this suit. The parties are identical, and the question involved in this case is the identical question involved in that case, to-wit, the validity of the ordinance of March 30, 1901. It appears in that case by written pleas, not withdrawn in the lower court, and which could not be withdrawn in the appellate Court, that the unreasonableness and oppressiveness of this ordinance was in issue.

The remarks in the opinion of the Court, that the question was not considered, and that it seemed to have been waived by consent, does not mean and does not state, that any consent was given by the City, or that it was not considered because of any act of the City. No consent on the part of the City was necessary, or if given would have prejudiced the City's rights to rely upon the judgement in that case as *res adjudicata.* It was not incumbent upon the City to object to the Water Company's waiver of any matter of defense, which it choose.

146 The language of the opinion of the Supremem Court on page 30, thereof, is a general statement of the law that a party complaining of rates may make the question in the Courts, but the Court there states that the reason that the question of the reasonableness was not seriously considered was because it had not been opened up, which means, of course, that it had not been supported by any evidence, although it had been pleaded by the Water Company.

Nor is the reservation in the decree of the Supreme Court available to the Water Com-any as an answer to this plea of *res adjudicata.* The decree sustaining the ordinance was entered without prejudice to the defendant's right to litigate and show in such way as it may be advised, that the rates perscribed by said ordinance are unreasonable and oppressive. The Court does not declare that there is any way by which the plaintiff Company could relitigate the question. The defense was one that went to the validity of the ordinance, was properly presented by plea, was cognizable by the Court and is now percluded by the decision in said cause. There is no reason why the Water Company shoule after the judgement upon this question has been rendered in the Court of last resort of the State, be allowed extrao-dinary process to arrest the force of the ordinance, thus sustained by the Supreme Court, until it can relitigate a question that was presented in that case,—especially in view of the plaintiff Company's conduct in refusing to be heard before the City Council or furnishing the information desired. It has in fact had two hearings, or the opportunity for two hearings, upon this question of reasonableness of rates. Its course has been one of obstruction, and defend-

ant charges that it has been purposely so: that the object of the Water Co. has been to delay by a series of litigations, as long as possible, the enforcement of the present ordinance.

147 The writ of error prosecuted by the plaintiff Company from the decision of the Supreme Court of the State of Tennessee does not involve the question of the reasonableness of rates, and does not therefore prevent the judgment of the Supreme Court of the State from operating as *res adjudicata* upon this question.

V.

And finally, the defendant insists that the plaintiff should not have the extraordinary process of injunction in this cause to further arrest the operation of said ordinance for the following reasons:—

1. It is not a corporation for the reason above stated, and therefore not entitled to maintain any suit as a corporation in this or any other Court.

2. The precise question involved in this case, as above shown, has been heretofore litigated and adjudicated in a suit between the parties to this cause, and in a Court of law. After the termination of the suit at law, a party who has neglected or waived his rights in the course of that suit, cannot have them restored by a Court of equity; especially is the plaintiff in a bad attitude to invoke extraordinary process in view of its course before the City Council and the Water Committee, in reference to giving information in regard to the reasonableness of the rates proposed, and in afterwards neglecting to offer any proof, after pleading the unreasonableness of the ordinance, in a Court of Law.

3. The plaintiff has failed, and it seems purposely failed to aver the one fact, which is most essential in a bill of this character, to-wit, reasonable value of the property which it is employing for the public use. Its averment of the cost of the property is not equivalent to the averment of its value. Without this averment the Court is not sufficiently informed to act upon the question attempted

148 to be presented.

It is especially remarkable that this averment should have been omitted from the bill, and that the plaintiff should have failed to offer proof upon this question of reasonableness of rates, after pleading it in the suit at law, and that the plaintiff Company's officers should have refused to express even an opinion as to the value of the property devoted to the public use, at the request of the City Council and its Committee.

4. Injunction as prayed for in this cause, would not give relief against a multitude of suits, if water consumers chose to bring them. The only party defendant to this cause is the City, and the injunction would operate only to prevent it from bringing suits for penalties.

In this connection defendant denies emphatically that it had contemp*l*ted or threatened any suits against the plaintiff Company for penalties. Defendant had not supposed that such suits would be necessary, after a decision of the Supreme Court of the State sustaining the or*b*inance, but that the plaintiff Company would do as

other citizens, and obey the law, at least after it had received the sanction of the Court of last resort of the state. The injunction would not operate to prevent any or all of the 4,000 consumers of water, from whom the Water Company exacts rates in excess of the ordinance, from bringing and maintaining suits against it.

5. No creditor of the plaintiff Company is complaining or involved in this cause. The plaintiff makes complaint so far as appears from the bill, on behalf of the creditors, without their knowledge or procurement. Defendant denies that any rights of creditors are in jeopardy. Creditors of the plaintiff Company, no more than the plaintiff, have the right to the benefit of anything but reasonable rates.

149 6. The avertments of the bill are fully met and denied by this answer.

7. Defendant denies that the operation of said ordinance will interfere illegally with the plaintiff Company's contracts with its consumers. If those cintracts are not reasonable rates, then they are illegal and this ordinance would properly interfere with them.

All averments of the bill not herein specifically denied, or admitted are here denied and put at issue.

Now having fully answered, defendants prays hence to be dismissed, with its reasonable costs.

THE BOARD OF MAYOR & ALDERMAN OF
THE CITY OF KNOXVILLE,
By S. G. HEISKELL, *Mayor.*

PICKLE & TURNER,
Sol's for Def't.

At the direction of the Mayor, and being the legal custodian of the official seal of the Board of M. & A. of the City of Knoxville, I hereto attach said seal and attest the same by my signature,

[SEAL.] C. C. NELSON,
Recorder & Treasurer of City of Knoxville, Tenn.

STATE OF TENNESSEE, *County of Knox:*

On this 4th, day of Jany., 1902 before me the undersigned authority, personally appeared Samuel G. Heiskell, Mayor of the above named defendant, who made solemn oath that he had read the foregoing answer, subscribed by the said defendant and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters, he beleives them to be true.

S. G. HEISKELL, *Mayor.*

150 Sworn to and subscribed before me, on this January 4, 1902.

[SEAL.] WESTLEY KENNERLY,
Notary Public, Knox Co., Tenn.

TAX SCHEDULE "B."

For Gas Works, Water Works, Electric Light Companies, Street Railroad and Dummy Railroad Companies, Turnpike Companies, and All Other Quasi-Public Corporations.

Part I.

(To be filled out by the Company's or concern's official).

Name of ins-tution. Knoxville Water Company.
What is the amount of stock authorized? $1,250,000. Divided into 12,500 shares. Amount of stock paid up $940,000,
How many shares issued? $295,000 perferred. $645,000 Common.
What is the market value per share? No market value.
What is the actual value per share? Impossible to state.
What is the amount of your bonded debt? $250,000.
What rate of interest does it bear? 6% per annum.
Is the interest paid? Yes. Or in default? —.
What is the market value per $100.00 share of your bonded debt? Unknown,—not listed.
What dividends have been paid on stock in the last two years? None ever paid, except 6% *per cent.* per annum on perferred stock.
What surplus have you on hand? None.
Below give an itimized statement of all the real property and tangible personal property, and in what County, District and Ward the same is situated, and the assessed value of each item; also an itimized statement of all stocks and bonds, securities, notes, accounts, and choses in action, owned, or held, whether unencumbered, transfer-ed, or deposited or used as collateral; and also all moneys on hand or deposited, and where the same is situated. The Company has no personal assets, except office furniture, horse, buggy, 151 picks, shovels, etc. Real estate, 1st, Pumping Station Lot in 1st. Ward, 2nd, Reservoir and Filter Plant Lots in 5th, Ward 3rd, Lot on Coleman St., in 11th. Ward; 4th, Pumping Station and Standpipe Lots in 12th District, 5th, Fourteen acres in 12th, District, adjoining Webb, Torwater *et als.*

STATE OF MASSACHUSETTS, *Suffolk County:*

I, Elbert Wheeler, Treasurer of the above named institution, do, by this, solemnly swear that the above statements contain a true and full report of the concern's business; that the concern has disposed of no property for the purpose of evading taxation; and that I have truthfully and fully answered all questions, so help me God.

ELBERT WHEELER.

Sworn to and subscribed before me this 31st day of March, A. D. 1900.

CHAS. HALL ADAMS,
Commissioner of the State of Tennessee.

Part II.

(To be filled out by the assessor.)

Value of bonds..... $ — Value of real estate.....
Value of interest bearing mortgages.....
Value of capital or capital stock.....
Value of franchise and other intangible property in this County
Value of other personalty in this County.....

Total.....

Value of real estate elsewhere.....
Value of franchise and other intangible personalty elsewhere.
Value of other personalty elsewhere.....

Total.....

The Assessor must forward duplicate to Comptroller.

Knoxville Water Co. *vs.* M. & A. of Knoxville. Ex. #1 to Answer of Defendant. (Seal.)

152 TAX SCHEDULE "B."

For Gas Works, Water Works, Electric Light Companies, Street Railroad Companies, Turnpike Companies, and all other Quasi-Public Corporations.

Part I.

Knoxville Water Company.

Name of Institution.

What is the amount of stock authorized? $1,250,000. Divided into 12,500 shares, amount of stock paid up $940,000.
How many shares issued $295,000 Preferred, $645,000 Common.
What is the market value? per share no market value?
What is the actual value per share? Impossible to state.
What is the amount of your bonded debt? $250,000.
What rate of interest does it bear 6 per cent per annum.
Is the interest paid? Yes.
What is the market value per $100.00 share of your bonded debt unknown—not listed.
What dividends have been paid on stock in the last two years? None ever paid except 6 % per annum upon preferred stock.
What surplus have you on hands? None.
Below give an itemized statement of all the real property and tangible personal property, and in what County, District and Ward the same is situated, and the assessed value of each item; also an item-

ized statement of all stocks, bonds, securities, notes, accounts, and choses in action, owned or held, whether unencumbered transferred, or deposited or used as collateral; and also all moneys on hand or deposited, and where the same is situated. The Company has no personal assets, except office furniture, horses, buggies, picks, shovels etc. Real estate; 1st, Pumping station, Lot in 1st, ward 2nd, Reservoir and Filter Plant. Lots in 5th ward; 3rd, Lot on Coleman St. in 11th ward 4th, Pumping station and standpipe Lots in 12th, District 5th, Fourteen acres in 12th, district adjoining Webb, Torwater *et als.*

153 STATE OF MASSACHUSETTS, *Suffolk County:*

I, Elbert Wheeler, Treasurer of the above named institution, do, by this solemnly swear that the above statements contain a true and full report of the concern's business; that the concern has desposed of no property for the purpose of evading taxation; that I have truthfully and fully answered all questions, so help me God.

ELBERT WHEELER.

Sworn to and subscribed before me, this 27 day of April A. D. 1901, at Boston in the County of Suffolk and state of Massachusetts.

CHAS. HALL ADAMS,

[SEAL.] *Commissioner of the State of Tenn.*

Part II.

Value of bonds.....	Value of real estate.....	
Value of interest bearing mortgages.....		
Value of capital or capital stock.....		
Value of franchises or other intangible property in this County.....		
Value of other personalty in this County.....		
Total.....		
Value of real estate elsewhere.....		
Value of real estate machinery, Standpipe, Pumping Station & all personal- in city.....		
Value of franchises and other intangible personalty elsewhere.....		$275,000
Value of other personalty elsewhere, Real Estate 12 dict....		1,470
Total.....		$276,470

[SEAL.]

The assessor must forward duplicate to Comptroller.

Knoxville Water Co. vs. M. & A. of Knoxville. Exhibit #2 to ans. of Def.

154 EXHIBIT NO. 3 TO THE ANSWER OF THE DEFENDANT.

KNOXVILLE WATER COMPANY
vs.
BOARD OF M. & A. OF THE CITY OF KNOXVILLE.

Mayor Heiskell's Letter.

KNOXVILLE, TENN., *July* 16, 1900.

Messrs. A. S. Birdsong, J. J. Conner and G. B. Davis, Water Committe-.

GENTLEMEN: The ordinance regulating rates to be charged by the Knoxville Water Company has passed two readings and been referred to your committee for investigation and report prior to its third reading.

In view of the great importance of the subject and of the fact that the City of Chattanooga has had some experience connected with the regulation of water rates, I thought it advisable to make the following suggestions;

The law holds that the rates fixed by municipal corporations for *quasi* public corporations, such as water Comapnyies, gas Companies, electric light Companies, etc., must be reasonable, but, unfortunately, in this state no decision has fixed a standard of just what is a reasonable rate and what is not a reasonable rate. It is unquestionbly true that there is a great complaint among the citizens that the water Company's rates are to- high.

"I suggest in order to have some way to arrive at a decision as to what is a reasonable rate, that your committee ascertain from the Water Company:

First. As to its bonded debt and interest thereon.

Second. Its gross income.

Third. Its operating expenses including all salaries.

Fourth. The valuation it fixes on its plant.

Fifth. The original cost *of* the present owners, Messrs. Wheeler & Parks.

Sixth. The kinds of improvements and the cost of the same since Messrs. Wheeler & Parks have been the owners.

155 "The Mayor & Alderman of Chattanooga in 1897 passed an ordniance regulating the rates of the City Water Company for the City. The City Water Company filed an injunction bill in the United States Federal Court, Judge C. D. Clark presiding, and procured an injunction against the Mayor & Alderman from carrying the rates fixed by the ordinance into effect. That suit is now pending in the Federal Court at Chattanooga, and Judge Clark has referred the question of what is a reasonable rate to a special Master Joshua W. Caldwell, of this city, to take proof and make report. Mr. Caldwell has not yet made his report because the proof on the part of the City is not all in. The proof on the part of the water Company has been taken.

In its bill, the City Water Company alleged as one of its charges that the rates fixed by the Mayor & Alderman were fixed without due investigation on their part, and that they did not know anything about the cost of the financial condition of the Water Company when they fixed the rate. The Water Company further claimed that it would be necessary for the Mayor & Alderman to know its financial liabilities before it could fix rates that would be reasonable and that the Company had no opportunity to be heard before the Committee to which the ordinance had been referred for investigation.

Now it is in order that no such charge shall be made against the City Council of Knoxville that I suggest to your Committee to get at the different items of the financial condition of the Water Company as above set out.

I further suggest that your Committee grant a full hearing to any representative of the water Company who may desire to appear and to all citizens of Knoxville who want to be heard upon this subject.

In the testimony taken by the City Water Company in
156 the Chattanooga case a full statement of its financial condition was set out, and in the event that litigation should ensue from the passage of the Knoxville ordinance on its third reading, it would be necessary for the Water Company to show up its financial condition; so that I take it that the Water Company would not hesitate to give the information that your Committee might request.

It is unnecessary to say that the regulation of water rates in Knoxville is a matter of the greatest and most universal importance, anthat your Committee should procure all the information in your power upon the subject by the fullest and most painstaking investigation, and it is in view of the importance of the subject that I have thought it proper to call your attention to the matters herein, and especially that the ordinance will stand the test in the Courts,

Respectfully, S. G. HEISKELL, *Mayor.*

4.

Alderman Birdsong's Letter.

KNOXVILLE, TENN., *July* 16, 1900.

Knoxville Water Co., Frank C. Kimball, Supt., Knoxville, Tenn.

DEAR SIR: An ordinance regulating your rates for the furnishing of water to the citizens of Knoxville has passed two readings in the City Council, and has been referred to the Water Committee for investigation and report prior to its passage upon its final reading.

In order that the City Council may have full information upon which to act in its effort to fix a rate that is reasonable for water, I respectfully request that you send me the following statement:

First. The amount of the Water Company's bonded debt and the interest thereon.

Second. Its gross income.

Third. Its operating expenses, including all salaries.

157 Fourth. The valuation it fixes upon its plant.

Fifth. The original cost to the present owners, Messrs. Wheeler & Parks,

Sixth. The kinds of improvements and the cost of the same since Messrs. Wheeler & Parks have been the owners,

"The request for information is not based upon any improper motive or desire to pry into or meddle with the financial affairs of your Company, but in order that the City Council may have as full information as possible in passing upon the question as to what is a reasonable rate to be fixed for the furnishing of water by your Company in this City.

An immediate reply will be greatly appreciated.

A. S. BIRDSONG,
Chairman Water Committee.

KNOXVILLE, TENN., *July* 16, '00.

Knoxville Water Company, Frank C. Kimball, Supterin-dent, Knoxville, Tennessee.

DEAR SIR: An ordinance regulating your rates for furnishing water to the citizens of Knoxville has passed two readings in the City Council, and has been referred to the water Committee for investigation and report prior to its passage upon its final reading.

In order that the City Council may have full information upon which to act in its effort to fix a rate that is reasonable for water, I respectfully request that you send me the following statement:

1st. The amount of the Water Company's bonded debt, and the interest thereon.

2nd. Gross income.

3rd. Its operating expenses including all salaries.

4th. The valuation it fixes upon its plant.

5th. The original cost *of* the present owners, Messrs. Wheeler & Parks.

158 6th. The kinds of improvements and the cost of the same since Messrs. Wheeler & Parks have been the owners,

This request for information is not based upon any improper motive or desire to pry into or meddle with the financial affairs of your Company, but in order that the City Council may have as full information as possible in passing upon the question as to what is a reasonable rate to be fixed for the furnishing of water by your Company in this City.

An immediate reply will be greatly appreciated.

(Signed) A. S. BIRDSONG,
Chairman Water Committee.

EXHIBIT #5 TO ANSWER OF DEFENDANT.

KNOXVILLE WATER CO.
vs.
M. & A. OF KNOXVILLE.

KNOXVILLE, TENN., *July* 17, 1900.

Mr. A. S. Birdsong, Chairmann Water Committee, Board of Mayor & Alderman, City of Knoxville, Tennessee.

DEAR SIR: Your favor of even date duly received, and in reply thereto I desire to state that the information you ask for is in the possession only of our Treasurer, Gen. Elbert Wheeler, of #14 Beacon St. Boston, Mass., who alone can give you the information desired, and I have therefore referred your communication to him for reply.

Respectfully yours,

KNOXVILLE WATER CO.
FRANK C. KIMBALL, *Supt.*

EXHIBIT #6 TO ANSWER OF DEF'T.

KNOXVILLE WATER CO.
vs.
M. & A. OF KNOXVILLE.

159 BOSTON, MASS., *July, 20th,* 1900.

Mr. A. S. Birdsong, Chairman of Water Committee Knoxville, Tennessee.

DEAR SIR: Yours of the 17th inst. to our Superintendent at Knoxville is referred to us for reply, as stated in his acknowledgement thereof to you of the same date.

Presuming that you- letter was prompted by the communication of the 16th inst. from his honor, the Mayor, recommending for reasons enumerated by him, the specific enquir-es contained in your letter to us, you will permit us to say, that even should we concede the right of the city to change the rates charged by us for water (which we do not, but, on the contrary maintain that these are fixed by existing contracts stipulations, between the City and us, and are, therefore, not subject to change, except by mutual agreement), the Committee would have no adequate basis for reaching equitable conclusions by having the information asked for in inter-ogatory number 1. (which information is, of course available to the City from the County records), as the amount of the Company's bonded debt represents only one of the several classes of capital invested in the works, all of which are fairly entitled to reasonable investment return before any reduction of rates or of income can properly become operative.

We suppose however, that the City desires to avoid taking any action which would result in perventing such reasonable income re-

turn upon the monies invested from time to time, which investments have been necessitated by the continued growth of the City, the demand for filtered water and numerous other additions
160 to and improvements of the Company's plant, resulting in a system necessarily of large cost, but giving the City a supply proportionate to its requirements, with water of a quality hardly to be equaled in any City of the South or West.

As to the single purpose *to* his Honor, the Mayor, in addressing your Committee, was unreservedly stated to contemplate determination of the financial condition of the Water Company in order that the City may be informed whether or not the present rates are reasonable in view of the cost or of said financial condition, and as your letter likewise unreservedly declares this to be the purpose of your inquiry we may and do answer inter-ogatories 2 and 3 by saying that the gross income of the Company is not sufficient, after paying necessary operating expense, including salaries, (which are merely nominal in amount to its executive officers) to afford or pay a reasonable return upon all of its several *froms* of capitalization; but on the contrary not a little of the money invested by its shareholders has been absolutely without return. Any reduction therefore of its net income through reduction of rates would necessarily and correspondingly postpone the time when such reasonable return could be obtained.

Any reply to question 4 could be only an expression of personal opinion, to which any one might and doubtless with great propriety, well take exception.

The 5th question, it is impossible for me to answer, having no knowledge thereof. We may, however, say that Wheeler & Parks never owned works, title to them always resting in numerous stockholders, the present number approximating 200.

The 6th. inquiry is practically answered by the preceeding statements, except as to the cost of the improvements which we respectfully submit is immaterial, in view of the declaration made
161 in answering inter-ogatories 2 and 3; said cost being included in capitalization from which no adequate or reasonable return has thus far been possible of realization.

We have no desire to withhold from the City any information which it is due; but the statement above made, should clearly indicate that *nany* lower rates *then* those now existing, may not be deemed reasonable, when account is taken of the cost of construction and operation of the plant, as above set forth.

If further information is wanted or if it is desired to equitably adjust this or any other matter of mutual interest we beg to assure you, we will gladly take it up with you, being confident that when a full understanding of essential details is reached, there cannot only be no reasonable grounds for complaint, but an adjustment reached to our mutual satisfaction.

Very Respectfully,

(Signed) KNOXVILLE WATER COMPANY,
ELBERT WHEELER, *Treas.*

EXHIBIT #7 TO ANSWER OF DEF.

KNOXVILLE WATER CO.
vs.
M. & A. OF KNOXVILLE.

STATE OF TENNESSEE, *Knox County:*

I, John A. McMillan Comptroller of the City of Knoxville, hereby certify that the following is a true and correct transcript from the Tax Books and records in my office of the Tax Assessments for City Taxes against the Knoxville Water Company for the last perceeding six years to-wit:

1901	Knoxville Water Co., real and personal estate, value	$275,000	Tax $3575.00
162			
1900	Knox. Water Co. Lands, Machinery, standpipe, etc., value.....	200,00–	Tax 2500.00
1899	" " " " "	165,000	" 2062.50
1898	" " " " "	165,000	" 2062.50
1897	" " " " "	160,000	" 2080.00
1896	" " " " "	150,000	" 1875.00

Done at my office at City Hall Knoxville, Tenn., on this 27th. day of Dec., 1901,

JNO. A. McMILLAN,
Comptroller.

Attest:
[SEAL.] C. C. NELSON,
Recorder and Treasurer of the City of Knoxville, Tenn.

EXHIBIT No. 8 TO ANS. OF DEF.

KNOXVILLE WATER CO.
vs.
M. & A. OF KNOXVILLE.

No. 1260, Knoxville Water Co., *vs.* Borad of Mayor & Alderman, of the City of Knoxville. Answer of Defendant. Filed. Jan. 4th, 1902. J. T. Carter, Deputy Clerk.

163 STATE OF TENNESSEE:

Charter of Incorporation.

Be it known that Peter Staab, John M. Brooks, F. M. Lowrie Joseph T. McTeer, Hector Coffin, Alvin Barton, H. H. Ingersoll and associates are hereby constituted a body politic and corporate by *hte* name and style of the Knoxville Water Company.

The general powers of said corporation are as follows:

To sue and be sued by the corporate name; to have and use a common seal, which it may alter at pleasure, if no common seal, then the signature of the name of the corporation by any duly authirized officer shall be legal and binding; to purchase and hold or receive by gift in addition to the personal property owned by said corporation, any real estate necessary for the transaction of the corporate business and also to purchase or accept any real estate in payment or part payment of any debt due to the corporation, and sell realty for Corporation purposes; to establish by-laws and make all rules and regulations not consistant with the laws and the constitution deemed expedient for the management of corporate affairs, and to appoint such subordinate officers and agents in addition to President and Secretary or Treasurer as the business of the corporation may require; designate the name of the office and fix the compensation of the officers, and the term of the same not however to exceed two years; to make regulations concerning the subscription for and transfer of stock; fix upon the amount of capital to be invested in the corporate business, the division of the same into shares, the time required for the payment thereof by the subscribers for stock, and the amount to be called for at any one time,
164 on the non-payment of which, after notice, a right of action shall accrue to the corporation against the stockholder in default.

The first Board of Directors shall be the corporators applying for and obtaining this charter, and thereafter the Board shall consist of five or more members at the option of the corporation to be elected by a majority of the votes cast by the stockholders, either in person or by proxy, each share representing one vote. A majority of the Board of Directors shall constitute a quorum and shall fill all vacancies until the next election.

The Board of Directors shall keep a full and true record of all their proceedings, and an annual statement of receipts and disbursements shall be copied on the minutes, which shall be subject at all times to the inspection of any stockholder, and the books of the corporation shall show the original and subsequent stockholders, their respective interests, the amount which has been paid on the shares subscribed, the transfer of stock, by and to whom made, and such other transactions as stockholders or creditors may be presumed to have a- interest to know.

The amount of unpaid stock due from a subscriber to the corporation shall be a fund for the payment of any debts due from the corporation, and the transfer of stock by a subscriber shall not relieve him from liability on his subscription till the full amount thereof has been paid.

The corporation shall have the right and power to borrow money and issue notes or bonds upon the faith of the corporate property, and also to execute a mortgage or mortgages as further security for repayment of money thus borrowed.

The business of said corporation shall be to establish and construct water works in or near the City of Knoxville, Tennessee, and

it shall be the duty of said Company to build, furnish and
165 equip water works of sufficient capacity to furnish the corporate authorities and inhabitants of the City with water.

To enable the Company to establish such works it is hereby authorized to lay down pipes through the streets, lanes and alleys of said city, in such a manner however as to produce the least possible inconvenience to the City or its inhabitants, or to travelers: and to take up pavements and sidewalks, provided they shall repair the same with the least possible delay.

The Company shall have power, and are hereby authorized, to bring into said city a sufficient supply of water by means of pipes or tanks, or in any other way, and to construct reservoirs for the reception thereof, and to supply with water the inhabitants of said City and the environs thereof, and all who may be along the line of the Company's pipes and of erecting hydrants or pin plugs within said City; and to contract with said inhabitants and with the corporate authorities of said City or any incorporated Company's for the use of said water, and charge such price for the same as may be agreed upon between said company and said parties; and consumers shall be subject to all such reasonable rules and regulations respecting the use and waste of said water as the directors of the Company may from time to time prescribe.

The works and operations of said Company shall be so conducted and managed that no annoyance shall accrue therefrom to the health and comfort of the inhabitants of the City, and nothing in this charter shall be so construed as to absolve the Company, its officers or agents from any legal proceedings to restrain or abate any nuisance arising from such waterworks or operations.

If any person or persons shall injure or destroy and portion of the water pipes, or other property of said Company or shall will-
166 fully open a communication into the street, or into other water pipes, or let on water after it has been stopped by the Company, such person or persons shall be liable for all damages sustained by such proceedings, and also to a penalty not exceeding five hundred dollars upon conviction before a Court having jurisdiction of the defense.

If any person or persons shall take or use any water of said Company for domestic or other purposes without having previously contracted for the same with the officers of said Company, such person or persons shall forfeit and pay to the said Company the sum of fifty dollars, to be recovered before any Justice of the Peace in the same manner as other debts are collected by law: provided, that nothing herein contained shall be construed to compell the inhabitants of said City to use the water so introduced by said Company or to prevent them from using water obtained in any other way.

And if any person or persons shall willfully corrupt or permit anything to run into or fall into any stream or reservoir from which the Company shall take water, to introduced into said City which shall corrupt the same, or render it unpalatable, unwholesome or unfit for domestic or manufacturing use, or for the supply of stationery or locomotive engines, or shall bathe in any dam or reservoir,

lead or enter any animal into the same he shall on conviction thereof before any Justice of the Peace of the Civil District in which said water is situated pay a fine of not less than ten nor more than fifty dollars, one half to the use of the informer and the other half to the use of said Company, and shall moreover remain liable to said Company for all damages.

A failure to elect officers at the proper time shall not dis-olve the corporation, but those in office shall hold until the election or appointment and qualification of their successors.

167 By no implication or construction shall the corporation be deemed to possess any power except those hereby expressly given or necessarily implied from the nature of the business for which the charter is granted, and by no inference shall said corporation possess the power to discount notes or bills, deal in gold or silver coin, issue any evidence of debt as currency, buy and sell any agricultural products, deal in merchandise, or engage in any business outside the purpose of this charter.

The right is reserved to repeal, annul or modify this charter, if it is repealed, or if the amendment proposed, being not merely auxiliary, but fundimental or rejected by a vote, representing more than half of the stock, the corporation shall continue to exist for the purpose of winding up its affairs, but not to enter upon any new business, if the amendments or modifications being fundimental are accepted by the corporation as aforesaid in a general meeting to be called for that purpose, any minor, married woman, or other person under disability, or any stockholder not agreeing to the acceptance of the modification shall cease to be a stockholder, and the corporation shall be liable to pay said withdrawing stockholders the par value of their stock, if it is worth so much; if not, then so much as may be its real value in the market on the day of the withdrawal of said stockholders as aforesaid; provided that the claims of all creditors are to be paid in preference to said with-drawing stockholders.

We, the undersigned, apply to the state of Tennessee by virtue of the laws of the land for a charter of incorporation for the purposes and with the powers declared in the foregoing instrument.

Witness our hand the 27th, day of December, 1881.

PETER STAUB.
JOHN M. BROOKS.
F. M. LOWRIE.
168 JOS. T. McTEER.
HECTOR COFFIN.
ALVIN BARTON.
H. H. INGERSOLL.

STATE OF TENNESSEE, *City of Knoxville:*

I hereby certify that leave to operate under the foregoing charter of the incorporation has been duly obtained from the corporate authorities of said City.

Witness my hand and seal of office this 30th, day of December, 1881.

GOE. M. WHITE,
Recorder.

STATE OF TENNESSEE, *Knox County:*

Personally appeared before me J. F. J. Lewis, Clerk of the County Court of said County, Peter Staub, Jno. M. Brooks, F. M. Lowrie, Jos. T. McTeer, Hector Coffin, Alvin Barton and H. H. Ingersoll, the within named bargainors with whom I an personally acquainted and who acknowledge that they executed the within instrument for the purposes therein contained,

Witness my hand and official seal at office at Knoxville, Tennessee, this 27 day of December, 1881.

J. F. J. LEWIS, *Clerk.*

STATE OF TENNESSEE, *Knox County:*

REGISTER'S OFFICE.

Received for record the 27 day of December, A. D. 1881, at 11 o'clock A. M. and recorded in book V., volume 3rd, page 495 to 498; Noted in note book B. page 178.

JOHN J. MARTIN,
D. Register.

I, D. A. Nunn, Secretary of state of Tennessee do certify that the charter, with certificates attached, the foregoing of which is
169 a true copy was this day registered and certified to by me this January 4th, 1882.

D. A. NUNN,
Secretary of State.

OFFICE OF THE SECRETARY OF STATE.

I, John W. Morton, Secretary of State, do hereby certify that the foregoing is a full, true and correct copy of the original charter of the Knoxville Water Company, granted and registered in my said office on the 4th, day of January, 1882, and as now appears of record on corporation book G, page 34, 35, 36, 37.

Witness my hand at office, Nashville, Tennessee, and the great seal of State, this January 10th, A. D. 1902, American Independence, the 126 year.

JOHN W. MORTON,
Sec'ty of State.

The seal to be affixed having been omitted by negligence of Secretary of State such ommission is waived by council in my presence.

HENRY O. EWING,
Special Master.

#1260, Knoxville Water Company, *vs.* M. & A. of Knoxville. Copy of charter Knoxville Water Co. office Secretary of State. Filed Jan'y 13th, 1902. J. T. Carter, Deputy Clerk.

170 *Amendment to the Charter of Incorporation State of Tennessee to Knoxville Water Co.*

State of Tennessee Amendment to the Charter of Incorporation of the Knoxville Water Company.

Be it known that on the 4th day of Jan'y, 1882 a Charter of Incor-oration was granted by the State of Tennessee constituting certain persons therein named a body politic and corporate by the name and style of the Knoxville Water Company, with the powers, privileges, conditions and restrictions therein stated (which Charter of Incorporation was registered in Book V. Vol. 3 Pages, 495-498 in the Register's office for Knox County, Tennessee and in corporation Record Book G, page 34 in the office of the Secretary of State of Tennessee) and under and by virtue of said Charter the said Knoxville Water Company was afterwards duly organized and a President and Secretary and Board of Directors elected and at a meeting of the Directors and stockholders of the said Knoxville Water Company held July 25, 1882, at which all officers and stockholders were present, it was unanimously resolved that an amendment be sought to said Charter of Incorporation of the tenor hereafter stated.

Now, Therefore, we the undersigned, Comprising the Directors and Stockholders of the Knoxville Water Company apply to the State of Tennessee by virtue of the general laws of the land for an amendment to said Charter of Incorporation for the purpose of imposing the following restrictions and limitation upon the exercises of the powers thereby conferred to-wit: XVII. This corporation is prohibited from issuing bonds in excess of the sum of One Hundred and twenty five Thousand Dollars (par value) for the period of five years next following July 1st, 1882, and after that time in excess of Twenty five Thousand Dollars additional, and the indebtedness of said corporation by bond shall not at any time exceed the
171 sum of One Nundred and fifty Thousand Dollars. All bonds issued in violation of this provision as to said Corporation shall be utterly null and void, shall not be obligatory upon said Corporation as a debt, nor in any way constitute a charge upon its property real or personal, but shall be only the personal and individual liabilities and obligations of the officers and stockholders actually participating in such wrongful issuance of the same, provided, that nothing herein Contained be construed or understood as in any way prohibiting or restraining said Corporation from altering enlarging or adding to its Capital stock already subscribed.

Witness my hand the 25th day of July 1882.

S. E. COOKE.
F. M. LOWREE.
ALVIN BARTON.
PETER STAUB.
SAM McKINNEY.

I, C. C. Nelson Recorder of the City of Knoxville, certify that the Board of Mayor and Alderman of the City of Knoxville have by a resolution of said Board approved the foregoing amendment to the Charter of Incorporation of the Knoxville Water Company and have granted leave to operate thereunder to said Company.

Witness my hand and seal of office this July 25th 1882.

C. C. NELSON,
Recorder.

City of Knoxville. Founded 1792.

STATE OF TENNESSEE, *Knox County:*

Personally appeared before me J. F. J. Lewis, Clerk of the County Court of Knox County. S. E. Cooke, F. M. Lowree, Peter Staub, Alvin Barton, and Sam McKinney, the within named bargainors, with each of whom I am personally acquainted and who acknowledged that they executed the foregoing instrument for the
172 purpose therein contained and it is certified for registration accordingly.

Witness my hand and seal of office at Knoxville, Tennessee this July 25, 1882.

J. F. J. LEWIS, *Clerk.*

[Seal of the County Court Knox County, Tennessee.]

Received for record 25th day of July, 1882 at 4½ P. M. and recorded same day.

JOHN J. MARTIN, *Dep. R.*

I, David A. Nunn, Secretary of State of the State of Tennessee do certify that the for-going instrument with certificates of acknowledgement of Probate and registration was filed in my office for registration on the 27th day of July 1882, and recorded on the 27th day of July 1882, in Corporation Record Book, G. in said office page 337.

In testimony whereof I have hereunto subscribed my official signature and by order of the Governor affixed the Great Seal of the State of Tennessee at the Department in the City of Nashville, this 27th day of July A. D. 1882.

D. A. NUNN,
Secretary of State.

[The Great Seal of the State of Tennessee. XVI. Agriculture.]

Received July the 29th, 1882 at 10 o'clock A. M.
Recorded the same day received.

JNO. J. MARTIN,
Dep't Register.

REGISTER'S OFFICE,
KNOX CO., TENN.

I, R. M. Johnson, Register of said County, do certify that the foregoing is a full true and perfect copy of the Am. Charter from State

of Tennessee to Knoxville Water Co. as the same appears of
173 record in this office in Book W/3, page 570.
Witness my hand at office in Knoxville, this 14th day of January 1902.

R. M. JOHNSON,
Register.

(Endorsements:) No. 1260 Rec'd of Pickle & Turner $3.15 as fee on within certified Copy January 14th, 1902. R. M. Johnson, Register. Knoxville Water Company *v.* M. & A. of Knoxville. Copy of Amendment to Charter of Knox. Water Co. Filed Jan'y 14 1902 J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States, Northern Division of the Eastern District of Tennessee. Equity.

THE KNOXVILLE WATER COMPANY
vs.
MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE.

The Replication of Plaintiff in the Above Cause, to the Answer of Defendant.

174 This repliant saving and reserving all advantage of exception to the manifold insufficiencies of said answer for replication thereto saith that it will aver and prove its said bill to be true and sufficient, and that said answer is untrue and insufficient; wherefore it prays relief as in said bill set forth.

CHARLES T. CATES, JR.,
J. W. CALDWELL,
Sol's for Pl'ff.

(Endorsements:) Replication. No. 1260. Knoxville Water Company *vs.* The Mayor & Aldermen of the City of Knoxville. Filed Jan- 16 1902 J. T. Carter Deputy Clerk.

175 In the Circuit Court of the United States, for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY, Plaintiff,
vs.
THE MAYOR & ALDERMAN OF THE CITY — KNOXVILLE, TENN., Defendant.

To the Honorable the Judges of the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee:

The petition of the Knoxville Water Company, plaintiff in the above entitled suit which respectfully shows to your honors:

First.

That the original and injunction bill in this cause was filed December 7th, 1901 against the defendant Mayor and Alderman of the City of Knoxville, asking to have certain ordinances of defendant, which are fully described in said bill, declared null and void, and their enforcement enjoined, because:

A. Said ordinances were and are in contravention and violation of Art. I, Section 10 of the Constitution of the United States, and of the first section of the Fourteenth Amendment thereof, in that they impair the obligations of certain contracts between petitioner and defendant, which contracts are sufficiently described in the pleadings in this cause.

B. Because said ordinances are unreasonable in that they attempt to prescribe water rates for petitioner which are inadequate, and would be ruinous to petitioner if enforced the rates therein
176 fixed being too low to afford petitioner a reasonable income on its investment in its water plant and property.

Second.

On the 4 day of January 1902, Defendant filed its answer resisting its relief sought by the bill, and on January 16th, 1902, plaintiff filed its replication.

Third.

On the 27th, day of January 1902, the Honorable Chas. D. Clark, one of the judges of this Court, handed down an opinion granting plaintiff's motion for a preliminary injunction, requiring as a condition to the issuance of the same, a bond in the sum of $20,000.00, conditioned as in said opinion set out. A decree was entered granting plaintiff's application for a preliminary injunction, which is in the words and figures following:—

"This cause was heard before the Honorable C. D. Clark, Judge &c. upon the record, and more ecpecially upon the plaintiff's application for a preliminary injunction, and argument of counsel having been heard, and the motion having been duly considered, and the Court being of opinion that the motion of the plaintiff Knoxville Water Company, for an injunction prohibiting the Mayor & Alderman of the City of Knoxville from enforcing an ordinance passed by said Mayor & Alderman March 30th, 1901, regulating water rates; also an ordinance passed October 4th, 1901, regulating water rates, until further order of the Court should be granted: it is so ordered, adjudged and decreed, and a preliminary injunction will be issued pursuant to the prayer of the plaintiff's bill in this cause, strictly commanding and enjoining the defendant, Mayor and Alderman of the City of Knoxville, its officers agents, servants and attorneys, under the pains and penalties which may fall upon them, and each of them, in case of disobedience that they forthwith desist from enforcing or attempting to enforce either of the afor-said ordinances.

But it is further adjudged that as a condition to the issuance of said injunction, the plaintiff execute bond in the sum of Ten Thousand ($10,000.00) dollars in favor of the defendant in name, and for

the use and benefit of consumers of water, and conditioned to abide by and perform the judgment of the court on final hearing, and in the event the plaintiff fails in this suit to pay into court all, or such portion of said bond as may be required by order of the Court, for the purpose of paying to the defendant City any excess
177 charges made, in order that such excess charges may be refunded to those who pay the same pending the litigation.

Said bond will be executed with sureties so that the deputy clerk of this court at Knoxville will certify that the same is good.

And now a bond having been executed by the plaintiff in compliance with the terms of this decree and having been approved and certified by said Deputy Clerk, at Knoxville, said injunction will issue forthwith.

Fourth.

Thereafter, and in pursuance of a suggestion contained in said opinion, and soon after same had been filed, petitioner began negotiations with defendant in order to ascertain whether or not a settlement of this suit, satisfactory to both parties, might be had, and to that end, they presented to the defendant several propositions of compromise, which were under consideration by defendant during the March term of this Court at Knoxville, and therefore no steps were taken in this cause during said term, but on the — day of April 1902, petitioner's proposition and offers of settlement were rejected by defendant, and since that time plaintiff, by its solicitors, has been negotiating with the solicitors of defendant for the purpose of agreeing, if possible, upon a method of procedure herein mutually satisfactory to the parties, and which would save them from expense. But this effort also has failed, and petitioner is compelled to apply, as it now does, to your honors for relief.

Fifth.

It will appear to your honors from an inspection of the bill and answer in this cause, that the fundemental and controlling question at issue and in controversy in this cause and generally between the parties thereto, is whether or not, the several contracts heretofore made between plaintiff and defendant, as sufficiently indicated by the pleadings herein, protect petitioner against the ordinances of the defendant, seeking to regulate and lower water rates, as agreed upon and prescribed in said contracts. And petitioner shows that
178 soon after the passage of the first of said invalid ordinances, to-wit:—An ordinance of March 30th, 1901, a penal suit was instituted by the Mayor and Alderman in the State Courts of Tennessee, in Knox County against petitioner, on account of its refusal to comply with and observe the invalid and oppressive provisions of said ordinance of March 30, 1901. In said penal suit, petitioner was successful in said Court of Knox County, but the action that Court having been reversed by the State Supreme Court, petitioner took said suit by a writ of er-or to the Supreme Court of the United States, where the same is now pending, and will, as the petitioner is informed and states, be reached for hearing within seven or eight months from the present time. In said suit pending

in the Supreme Court of the United States, is directly and primarily involved the question whether or not said ordinance of March 30, 1901, and another ordinance identical in effect, passed thereafter, are invalid, because they are violative of Article I, Section "10" of the Constitution of the United States, and the first section of the fourteenth Amendment thereof. Petitioner is advised and respectfully avers that before this Court would, or ought to order a reference in this cause to determine the question of the reasonableness of the rates prescribed by said ordinances, it must first be determined by your honors in this cause or upon a proper proceeding, in some other forum having jurisdiction whether or not the contention which is now made herein, and is also made in said suit in the Supreme Court of the United States, to-wit:—whether or not the defendant Mayor & Alderman had power, under the circumstances, to pass said ordinances, is well taken. Said question of the power of the defendant to pass the ordinances was pending in said suit in the Supreme Court of the United States, before the bill was filed in this cause, and is still before that court for determination, and the decision
179 which may be reached in the Supreme Court in regard thereto must of course be controlling in this cause.

Petitioner again averring that said question now before the Supreme Court is fundemental and controlling in the entire controversy between the parties to this suit, says: That if that case should be decided in Petitioner's favor as Petitioner beleives it will be decided, in view of the many decisions of that Court, one being the recent decision in the Detroit Michigan Street Railway Cases, then the determination of the question of the reasonableness of water rates raised in this cause, would become wholly immaterial. In other words, if the Supreme Court of the United States should hold that said Mayor & Alderman had no power, in view of the existence of contracts between it and petitioner, or for any other reason, to pass said ordinance of March 30th 1901, or said subsequent ordinance, there can be no reason for inquiring as to the reasonableness of the rates prescribed in said ordinances. Petitioner is advised and says that it is the fixed practice of Federal courts where two causes are pending in different courts and between the same parties, that the decision of the one first instituted will be conclusive of the second to stay proceedings in the second until the first shall have been determined, and petitioner believes that all the reasons, or all the imprtant reasons which support this well-established practice, exist in this instance, and it is advised that the court has the power and prays that it will exercise the same, to stay the present proceedings until the termination of said supreme case. If petitioner should fail in the Supreme Court, then the present cause can proceed, after the delay of about eight months. If petitioner should succeed therein, then the bill before this court would become unnecessary. This honorable Court will know, from a large experience in causes like this, that they involve heavy expenses. No other kind of litigation probably is so expensive, because the testimony must consist very largely of
180 expert opinions based upon long, tedious and different special preparation. The expert witnesses must be men of high

scientific at-ainments, whose fees are large, and who must be brought from a distance at heavy charges to the parties, and even the successful party in such litigation is unavoidably charged with heavy expenses. A costly reference to a Special Master is a necessary feature to such a suit.

In view of the fact that a suit is now pending in a court of final resort, which may have, and as Petitioner believes will have the result of making the prosecution of this cause unnecessary; although properly brought, as your honor has decreed for the protection of the Water Company, petitioner is advised that under the decisions and practice of the Federal court, it is entitled to have an order staying this cause as above indicated. Petitioner refers especially to the Chattanooga Water Case, lately pending before this Court, and to the Memphis Gas Company case, as illustrations of the extremely costly character of litigation of this kind, and respectfully, but very earnestly insists that both parties to the present litigation should be saved such expenses, if that result can be accomplished in a proper manner, as petitioner says it may be in this cause.

If any additional bond should be considered necessary, petitioner hereby tenders same, and renews the allegation above made upon information and belief that the said Supreme court case will be reached and determined within eight months from the present time.

The Premices Considered the petitioner prays that an order may be entered herein staying all further proceeding in this case until the final determination of the suit between the Mayor and Alderman of the City of Knoxville and the Knoxville Water Company, now pending in the Supreme Court of the United States above
181 referred to, relying upon the reason above set oyt, and for others to be shown in argument at the hearing.

It prays for general relief; and has, on this, the 15th day of May, 1902, delivered a copy of this petition to adverse counsel, and hereby notifies them that the original has been filed, this 15th day of May, 1902, in the office of the Clerk of the United States Curcuit Court, at Knoxville, Tennessee, with the request that it be forwarded at once to the Honorable C. D. Clark, Judge, &c., with an application which is hereby made, that the same be set down for hearing by his honor, at a place convenient to him and at a time not more than five days from the date of filing the same.

THE KNOXVILLE WATER COMPANY,
By CHAS. T. CATES, JR., *stt'y*,
J. W. CALDWELL,
CHAS. T. CATES, JR.,
Solicitors.

STATE OF TENNESSEE, *Knox County:*

Frank C. Kimball, Supt. of the Knoxville Water Company makes oath that the statement made in the foregoing petition as of his own knowledge are true and those made upon information and beleif he believes to be true.

FRANK C. KIMBALL.

Sworn to and subscribed before me, this 15th day of May 1902.
[SEAL.] ROBERT PFLANZE,
Notary Public.

Bill of cost 25c.

(Endorsements:) No. 1260. Petition of Knoxville Water
182 Company. Knoxville Water Company, *vs.* M. & A. of Knoxville. Filed, May 15th, 1902. J. T. Carter, Deputy Clerk.

183 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY, Plaintiff,
vs.
THE MAYOR AND ALDERMAN OF THE CITY OF KNOXVILLE, TENN.

Defendant Mayor and Alderman of the City of Knoxville by its solicitors hereby acknowledges that there was delivered to them on the 15th, day of May 1902, a copy of plaintiff's petition filed in this cause on said date, and further hereby acknowledge service of plaintiff's motion filed herein on this 19th. day of May 1902.

PICKLE & TURNER,
Sol's for Def't.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Co. *vs.* Mayor and Alderman of Knoxville. Acknowledgement of Notice of Petition and Motion. Filed May 19, 1902. J. T. Carter, Deputy Clerk.

184 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY, Plaintiff,
vs.
THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE, TENNESSEE.

Comes now the plaintiff, by its solicitors and enters a motion for a hearing of the matters contained in its petition filed herein on the 15th day of May 1902, or a day to be fixed by this Honorable Court, for said hearing and for an order of stay in conformity with the prayer of said petition.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Co. *vs.* Mayor and Alderman of Knoxville. Motion. Filed May 19th. 1902. J. T. Carter, Deputy Clerk.

185 KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

Memorandum of Plaintiff's Objection to Certain Items in the Order of Reference Proposed by Defendant.

The plaintiff proposed and submitted to defendant a draft of an order of reference, a copy of which draft is herewith shown your Honor. Your Honor will see that it is substantially the same as the order in the Chattanooga case, and we think it sufficient for all the purposes of this case. It contains eleven specific questions to be answered by the Master.

The order proposed by defendant embraces 24 questions, nearly all of which, we submit, are covered by the first eleven thereof, which are taken from the draft proposed by plaintiff. These first eleven in Def't's draft, therefore, we do not object to, but the others we submit are surplusage or are irrelevant.

We offer the following objections to them using the num-
186 ber given them by defendant.

No. XII.

This is in all respects identical with No. XI. in meaning and effect, and is therefore unnecessary.

No. XIII.

This directs the Master to report what per cent. would be a fair return on investments of the character here involved in the money markets of this country etc. We submit that no such inquiry is *not* relevant or proper. The money markets of the Country do not afford a criterion for determining any question here involved. Actual local conditions must determine the reasonableness of plaintiff's income. New York and Chicago rates of interest cannot control in a locality, so remote from both cities.

No. XIV.

This calls for report as to property abandoned, and depric-ated; Both of which subjects are fully covered by the original eleven questions.

No. XV.

This calls for report as to the contract or arrangement under which plaintiff acquired the Lonsdale and North Knoxville Water Plants, the price paid, reasonable value, etc. This appears to us to be an effort to go into a collateral controversy between the parties. The only question legitimately involved, is the fair and reasonable value of the property now employed by plaintiff in the public service, including the Lonsdale and the North Knoxville properties. The method by which these last properties were acquired, if a proper subject of inquiry in any litigation, is certainly not proper in this

one. If defendant wishes to attack these transactions the Courts, are open to it as they have been ever since the properties were acquired by plaintiff. This cause is not the proper place to obtain evidence for another suit or for use in the event the City
187 should wish to buy the water plant upon an apprais-ment as provided for in the contract.

No. XVI.

This calls for the capital stock of plaintiff a matter fully covered by the eleven original questions. It also calls for the amount of stock issued, which is legitimate and is covered by the first eleven questions, but it also calls for the name of the stockholders and the price paid by them etc. This is clearly irrelevant and purely inquisitive. The nature of this investigation is sufficiently inquisitorial at best, and we submit that the court will not permit inquiry into plaintiff's private affairs any further than is necessary, and this we think not necessary.

No. XVII.

This calls for the amount etc. of the bonded debt, which is necessarily called for in the eleven original questions but the inquiry must be of the date of the passage of the ordinance.

No. XVIII.

This calls for the value of the franchise apart from the tangible property, and how acquired. If your Honor holds that the value of the franchise is an element to be considered in arriving at the value of plaintiff's plant we shall not object to this question, otherwise the question is clearly irrelevant.

No. XIX.

The "Valuations" at which plaintiff's property has been assessed can hardly afford a criterion in this cause, or materially aid the Master, and if competent at all the inquiry must be limited as to time, and not extended back indefinately. But we submit that the whole inquiry is immaterial.

No. XX.

This would inquire as to amounts withdrawn from assets of the Company. This is purely inquisitive, as the inquiry is
188 as to the present value.

No. XXI.

This inquiries as to the extent that the services and revenues of plaintiff have been increased since the passage of the ordinance of March 30th, 1901. This is clearly and grosely incompetent. The only proper inquiry is as to the reasonableness of the ordinance when it was passed. If defendant had no right tp pass it March 30th, 1901, it was and is invalid, and an unjust and vicious law cannot be cured by facts occur-ing after its passage. We may

have no reason to object to the results of such an inquiry, but it is our right to have the examination confined to its legitimate scope and purposes.

No. XXII.

Whether or not the leave of the City to operate plaintiff's plant was certified on plaintiff's charter is a question wholly immaterial now, but we do not object to a certification of the facts by the Master, if the Court wishes it.

No. XXIII.

This inquires whether or not the Lonsdale and North Knoxville Water Companies were competitors of plaintiff when plaintiff purchased them. A more improper question, for the present inquiry could hardly be conceived. Suppose they were competitors, can your Honor so decree now, and set aside the sales? We cannot believe that Defendant really thinks it possible for this Court to make such investigation as it asks for here, in this cause.

No. XXIV.

If your Honor wishes the Master to report the facts as to the plea of *"res judicata,"* we have no objection, but we submit that this is purely a question for the Court.

189 We submit that the order of reference proposed by plaintiff is sufficient in all respects and should be made the order of the Court.

Respectfully submitted,

C. T. CATES, JR.
J. W. CALDWELL,
Sols. for Pl'ff.

The foregoing brief having been submitted to defendant's counsel, with drafts of order of reference, we now, upon receipt of defendant's brief, reply to defendant's objection to item XI. in our drafts of order (and also in defendant's) by stating that as we now recollect, said item eleven as it now stands, was copied literally from the order of reference in the late Chattanooga case, in which it is believed to have been worded by your Honor and not by Counsel.

We object very positively to the MS. addition to defendant's already objectionable item XXIII., which seeks to inquire into the validity of the transfer of the Lonsdale and North Knoxville properties to plaintiff.

(Endorsements:) Knoxville Water Company *vs.* The Mayor & Alderman of the City of Knoxville. Memorandum for Pl'ff on Proposed order of Reference. Filed, Oct. 2, 1902. J. T. Carter, Deputy Clerk. #25.

190 No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
BOARD OF MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

The Court having ordered and directed the Special Master, H. O. Ewing, appointed in this case, to report upon any special matters of questions, that either party shall request him to report upon, in writing, the defendant the Board of Mayor & Aldermen of the City of Knoxville, hereby, in compliance with said order, request the Special Master to report upon the following matters or questions in addition to those specifically set out in the II section of the Order of Reference, to-wit:

1.

Whether the rates fixed by the defendant's said ordinance of March 30th, 1901, was reasonable and would afford or permit a reasonable income on the fair value of the Complainant's property, actually being applied to, and in use for public purposes, at the date of the passage of said ordinance, taking into consideration the rights of the public, as well as the rights of the stockholders of said Company and in this connection he will report the rela-
191 tive values of that portion of the property applied and used within the City limits, and of that portion lying outside of the limits of said City of Knoxville.

2.

What per cent. constituted at the date of the passage of said ordinance, a fair and reasonable return on investments of the character involved in this case.

3.

What portions of the Complainant's property have been abandoned for public use, where situated and the costs of its construction, and its present value. Likewise, what portions, if any, of Complainant's property *is* unfit or unsuitable or inadequate for public uses, and what depreciation its property has suffered from general causes.

4.

Under what arrangement or contract the Complainant acquired the plant of the Lonsdale-Beaumont Water Co., and of the plant and property of the North Knoxville Water Co. from Wheeler & Parks, the price paid for the same, how paid, the fair and reasonable value of the same at the date of the purchases, and any other material facts relating to the acquisition of these properties.

5.

The amount of the capital stock of the Complainant Co., to what extent and to whom shares have been issued, when issued, and — whom now held, and the subscription price paid for the same, how when and at what price acquired by the present holders.

6.

The amount of the bonded indebtedness or other indebtedness of the Complainant Co., how, when and by what authority created, to whom due, and what interest the same bears.

7.

192 The valuation at which the property, plant, etc., of said Company have been assessed for taxation, at and prior to the date of the passage of said ordinance.

8.

What amounts, if anythin ,, have been withdrawn from the assets of said Company by stockholders, either directly or indirectly, when, by whom, and by what authority withdrawn.

9.

To what extent the services and revenues of the Complainant Co., have been increased since the passage of said ordinance of March 30, 1901, stating the same annually.

10.

Whether leave of the City to operate Complainant's plant was certified upon its application for charter and registered with it.

11.

Whether the Complainant Company and the Lonsdale-Beaumont Water Co., and Wheeler & Parks owning the North Knoxville plant were competing companies at the time of their alleged consolidation.

12.

Whether the amount invested by the Complainant Co., in its plant and property was reasonably and necessarily required in its construction and operation.

13.

The Special Master will report the facts as they appear from the record in regard to the plea of *res adjudicta* set up in the answer.

J. W. CULTON, *City Att'y.*
PICKLE & TURNER,
Sols. for Def't.

193 (Endorsements:) No. 1260. Knoxville Water Co., *vs.* Board of M. & A. of Knoxville. Defendant's request for report by Special Master, on Special Matters. Filed Oct. 10 1902. J. T. Carter, D. C. #27.

194 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

The Petition of the Knoxville Water Company, Plaintiff in the Above Entitled Cause.

To the Honorable the Judges of the Circuit Court of the United States for the Sixth Circuit and Eastern District of Tennessee:

The plaintiff respectfully shows to your Honors that heretofore an order of reference was made in this cause designating H. O. Ewing, Esq., Clerk of this Court, as Special Master to hear proof and determine the questions pending herein. Said order of reference specified eleven subjects of inquiry, and there was appended an order by your Honor which is in the following words, to-wit:

"The Special Master will report on any other special matter or question about which he is specifically requested to report by either side in writing within ten days after entry of this Order, said requests to be filed and made part of the record. In case any irrelevant or unnecessary inquiry is opened up by such request, the cost thereof will be taxed against the party making such requests, and the Master will report if any needless costs are thus caused."

A Copy of said original Order of Reference is attached hereto marked Exhibit A.

195 Construing the 12th, clause of said Order of Reference above quoted to enlarge the scope of the Reference, and to permit it to make inquiry in regard to matters not covered by the eleven items of reference in the order, the Defendant, the Mayor & Alderman of the City of Knoxville, after the entry of said Order of Reference, and within the time allowed by said 12th clause filed a written request with the Clerk of the Court, covering 13 additional inquiries to be made by the Master. Certain of these inquiries are repetitions or variations of those embraced in the original order; others as petitioner is advised and alleges, pertain to matters entirely without the scope of the original Reference as a matter of law and as regards the order of the Court. In the time at its command, petitioner will be unable to indicate in detail all those points in said thirteen supplemental inquiries which are objectionable in law but will point out those which are most objectionable, and will ask leave of the Court to present its objection to the others in argument. It herewith files a copy of said thirteen requests as certified by the clerk of this Court, marking same Exhibit B to this petition. Not waiving its rights of exception to any other of the items of supplemental reference, petitioner shows that, under the 5th head thereof, Defendant seeks to inquire the amount of the capital stock of plaintiff, which is admissable; to what extent the same has been issued, which is admissable, and to whom the shares have issued, which

petitioner respectfully submits is not admissable; by whom now held is not admissable, and the subscription price paid for the same, how, when and at what price acquired by the present holders, which is not admissable or competent.

Under the 7th head is inquired the valuation at which the property, plant, etc., of said Company has been assessed for taxation, at and prior to the date of the passage of said ordinance, which petitioner submits covers at least two questions that are in-
196 competent under the original Order of Reference, or any reasonable construction or enlarg-ment thereof.

Under the 8th head it is inquired what amounts, if anything, have been withdrawn from the assets of the Company by stockholders, which is clearly incompetent under the Order of Reference or any purpose contemplated therein.

Under the 9th head it is asked to what extent the services and revenues of the Complainant Company have been increased since the passage of said ordinance of March 31, 1901, stating the same annually. This entire item petitioner submits is wholly irrelevant to the issue in the cause and incompetent and any proof taken in response to it must be treated as mere surplusage in the record, and petitioner shows that in two or three forms, in the examination of the Defendant William Wheeler President of the Plaintiff Company, has insisted that the witness state the revenues of the Company and other facts in regard to it, since the 30th of March, 1901. Petitioner calls the attention of the Court to the facts that the ordinance contested in this cause was passed on the 30th of March, 1901, and that said 9th supplemental inquiry is directed exclusively to facts arising since the 30th of March, 1901. Petitioner is advised and alleges that any matter arising since said date cannot properly be inquired into in this cause, the investigation being limited, both by the order of the Court, and by the law of the case, to conditions that existed on or before March 30th, 1901.

In this connection, Petitioner alleges that it verily believes that said 9th supplemental inquiry and others of said supplemental inquiries were intended for and are being used for the purpose of laying grounds for attacking petitioner in the matter of its tax assessment, or for other purposes entirely without the legitimate scope of the present investigation, and in support of this allegation, the petitioner files herewith, marked Exhibit C, a copy of the Knoxville Sentinel of date of Thursday, Nov. 13, 1902, which is since the beginning of the taking of the proof in this case and points
197 out therein, on page 3, an article entiled as follows: "Birdsong advocates purchase of Water Works Plant."

Said A. S. Birdsong mentioned in said Exhibit "C," is a representative elect to the next General Assembly of Tennessee and is a member of the present municipal Council of Defendant and Chairman of its Water Committee and as such the author of the ordinance in question in this case. From an examination of which article petitioner concludes and avers that it is the purpose of the Defendant in this case to make use of the present investigation for purposes

which are not contemplated in the order of Reference, and which cannot be properly or legally accomplished herein.

Petitioner further asks the attention of the Court to the fact that the Special Master has held upon this date, Nov. 17, 1902, that under said supplemental requests and the order of the Court allowing supplemental requests, it is not in his power to exclude from the record in this cause any testimony responsive to any of said supplemental inquiries, no matter how irrelevant or incompetent such testimony may be. A copy of that portion of the evidence taken upon this date, which contains the Special Master's ruling here referred to, is exhibited to this petition marked Exhibit D. Petitioner will ask the Court if necessary to examine other testimony taken in the cause.

Petitioner shows to your Honors that in its opinion the ruling of the Master involves a misconstruction of the order of the Court quoted above as No. 12 in the original order of reference. The language of said cause is "The Special Master will report on any other special matter, etc." Petitioner is advised and believes that it was the purpose of the Court in making said 12th, order, to permit the defendant to have inquiry made by the Master in regard to any special matter arising out of, or germane to, the eleven original items of the Order of Reference, and not to include in said requests anything not germane to the said original
198 orders, and not material to a determination of the issues involved in this cause.

Without enlarging upon this point, petitioner shows that the defendant is now upon the third day of its cross-examination of the first witness for plaintiff herein, and is insisting, in the course of said cross-examination, that it has the right to introduce all the matters hereinbefore referred to as irrelevant, and that it has introduced into the record many things that do not belong there by any legitimate construction of said order, and petitioner believes that in the proper protection of its rights in the premises and for the attainment of justice in this cause, it is its duty to present the questions here made to your Honor, and to ask a revision of said special requests of the defendant, which shall limit the inquiry in this cause to such matters as are legitimately involved and prevent the introduction of irrelevant testimony and of matters which, as it verily believes, are inquired about by the defendant for the sole purpose of working injury to plaintiff elsewhere, that is to say, petitioner prays that your Honor will revise and construe the 12th clause in the original Order of Reference.

The premises considered, plaintiff will pray that your Honor revise said 12th, clause of the original Order of Reference and the thirteen supplemental requests of the defendant, for the reasons hereinbefore said, and for such other reasons as may be presented in argument, and as in duty bound I will pray.

KNOXVILLE WATER COMPANY,
By WILLIAM WHEELER, *Pres.*

C. T. CATES, JR.,
J. W. CALDWELL, *Sol's.*

Be it remembered that at a Circuit Court of the United States began and held for the Northern Division of the Eastern
199 District of Tennessee, at the Federal Court Rooms in the City o- Knoxville, within said district and the sixth Circuit on the Second Monday, it being the 8th day of September, A. D. 1902.

Present and presiding the Honorable C. D. Clark, Judge of the District Court of the United States for the Eastern and middle Districts of Tennessee, the following proceedings were had, to-wit:

MONDAY, *October 6th*, 1902.

Court met pursuant to adjournment.

Presiding at Chambers in Chattanooga, the Honorable C. D. Clark, Judge, &c.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

This cause by consent of parties and for special reasons appearing to the Court is referred to H. O. Ewing as Special Master, who is ordered to hear all proof offered by plaintiff and defendant and to report to this Court as follows:

First.

The amount invested by plaintiff in its entire plant and property.

Second.

The amount invested in the corporate limits of the City of Knoxville, including machinery, apparatus, and all appliances and property of every kind used in the operation of the water plant within said corporate limits.

Third.

The amount and character of plaintiff's indebtedness and the property covered by it on March 30th, 1901.

Fourth.

The value of plaintiff's entire plant and property at the time of the passage of the ordinance of March 30th, 1901.

Fifth.

The actual value of the plant and property within the corporate limits of the City of Knoxville, including the machinery, ap-
200 paratus and all appliances and property of every kind used in the operation of the plant within said corporate limits when the ordinance of March 30th, 1901, was passed.

Sixth.

The gross revenue derived by plaintiff from its entire water plant and property under the rates in effect prior to March 30th, 1901, and how much same would be reduced by said ordinance of March 30th, 1901.

Seventh.

The total revenues derived by plaintiff from water supplied within the corporate limits under rates in effect prior to March 30th, 1901, and how much same would be reduced by said ordinance of March 30th, 1901.

Eighth.

An itemized statement of plaintiff's expenses per annum and what part of same pertains to the property within the corporate limits of the City.

Ninth.

The extent and kind of investigation made by defendant before the passage of the ordinance of March 30th, 1901, the notice given to plaintiff, when and by whom.

Tenth.

What would be a fair amount to allow annually for depreciation of the water plant and property of plaintiff from natural causes and by wear and use and depreciation accrued to March 30th, 1901.

Eleventh.

Whether or not the rates fixed be Defendant's ordinance of March 30th, 1901, are reasonable and would afford or permit a reasonable income on the capital invested in the plant and property by plaintiff.

The Master will take proof with all reasonable dispatch and will, if possible, file his report in time for action at the next term of this Court.

Twelfth.

201 The Special Master will report on any other special matter or question about which he is specifically requested to report by either side in writing within ten days after entry of this order, said requests to be filed and made part of the record. In case an irrelevant or unnecessary inquiry is opened up by such request the cost thereof will be taxed against the party making such request and the Master will report what, if any, needless cost are thus caused.

Enter this.

(Signed) CLARK, *J.*

THE UNITED STATES OF AMERICA,
Eastern District of Tennessee, —— Division, ss:

I, Henry O. Ewing, Clerk of the Circuit Court of the United States, within and for the District aforesaid, do hereby certify that the foregoing is a full, true and perfect copy of the original as the same appears on file and of record in my office.

In testimony whereof, I have hereunto set my hand and affixed the Seal of said Court, at the City of Knoxville Tennessee, this 6th day of October A. D. 1902.

[Seal of the Circuit Court.]

HENRY O. EWING, *Clerk,*
By J. T. CARTER, *Deputy.*

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
BOARD OF MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

The Court having ordered and directed the Special Master H. O. Ewing, appointed in this case, to report upon any special
202 matters or questions, that either party shall request him to report upon, in writing, the defendant, the Board of Mayor & Alderman of the City of Knoxville, hereby in compliance with said order, request the Special Master to report upon the following matters or questions in addition to those specifically set out in the II Section of the order of Reference to -wit:

1.

Whether the rates fixed by the defendant's said ordinance of March 30th, 1901 was reasonable and would afford or permit a reasonable income on the fair value of the Complainant's property, actually being applied to and in use for public purposes, at the date of the passage of said ordinance, taking into consideration the rights of the public as well as the rights of the stockholders of said Company; and in this connection he will report the relative values of that portion of the property applied and used within the City limits, and of that portion lying outside of the limits of said City of Knoxville.

2.

What per cent. constituted at the date of the passage of said ordinance, a fair and reasonable return on investments of the character involved in this case.

Exhibit B.

3.

What portions of the Complainant's property have been abandoned for public use, where situated and the costs of its construction, and its present value. Likewise, what portions, if any, of Complainant's

property is unfit or unsuitable or inadequate for public uses, and what depreciation its property has suffered from general causes.

4.

Under what arrangement or contract the Complainant ac-
203 quired the plant of the Lonsdale-Beaumont Water Co., and of the plant and property of the North Knoxville Water Co., from Wheeler & Parks, the price paid for the same, how paid the fair and reasonable value of the same at the date of the purchase, and any other material facts relating to the acquisition of these properties.

5.

The amount of the capital stock of the Complainant Co. to what extent and to whom shares have been issued, when issued by whom now held, and the subscription price paid for the same, how, when and at what price acquired by the present holders.

6.

The amount of the bonded indebtedness or other indebtedness of the Complainant Co., how, when and by what authority created, to whom due, and what interest the same bears.

7.

The valuation at which the property, plant, etc., of said Company have been assessed for taxation, at and prior to the date of the passage of said ordinance.

8.

What amounts, if anything, have been withdrawn from the assets of said Company by stockholders, either directly or indirectly, when, by whom, and by what authority withdrawn.

9.

To what extent the services and revenues of the Complainant Co. have been increased since the passage of said ordinance of March 30, 1901, stating the same annually.

10.

Whether leave of the City to operate Complainant's plant was certified upon its application for charter and registered with it.

11.

Whether the Complainant Company and the Lonsdale-Beaumont Water Co., and Wheeler & Parks owning the North Knoxville plant were competing companies at the time of their alleged con-
204 solidation.

12.

Whether the amount invested by the Complainant Co., in its plant and property was reasonably and necessarily required in its construction and operation.

13.

The Special Master will report the facts as they appear from the record in regard to the plea of *res adjudicata* set up in the answer.

J. W. CULTON, *City Att'y.*
PICKLE & TURNER,
Sol's for Def't.

Endorsed: No. 1260. Knoxville Water Co., *vs.* Board of M. & A. of Knoxville. Defendant's request for report by Special Master on special Matters. Filed Oct. 10, 1902, J. T. Carter, Deputy Clerk.

THE UNITED STATES OF AMERICA,
Eastern District of Tennessee, —— Division, ss:

I, Henry O. Ewing, Clerk of the Circuit Court of the United States, within and for the District aforesaid, do hereby certify that the foregoing is a full, true and perfect copy of the original as the same appear on file and of record in my office.

In testimony whereof, I have hereunto set my hand and affixed the Seal of said Court, at the City of Knoxville, Tennessee, this 30th day of October, A. D. 1902.

[Seal of the Circuit Court.]

HENRY O. EWING, *Clerk,*
By J. F. CHUMBLEY, *Deputy.*

205 EXHIBIT 6.

Birdsong Advocates Purchase of Water Works Plant.

Hon. A. S. Birdsong, one of the newly elected members of the legislature from Knox County, will perhaps be a busy man when he gets to Nashville. He will no doubt, interest himself in the same question which he has been handling since his election to the City Council three years ago, namely, the Water question.

When seen by the Sentinel reporter this morning, and asked what — the first bill he intended to introduce he said:

"I am strictly on the water wagon, you know, and I will perhaps make my first bill one allowing the City of Knoxville to issue bonds to build or buy her own water works. The settlement of the pending suit as to the validity of my ordinance fixing the rates which have nothing to do with the bill. I intend to introduce it any way the suit may go. I am a firm believer in the City owning its own waterworks. It will not be an expenditure like the improvements of streets and sewers which bring no direct revenue, but will be a paying investment from the start. The City pays about $100,000 a year for water. This amount turned into the Treasury would pay all the interest on the investment and provide a sinking fund which would soon retire the bonds.

"Take Atlanta, for instance, she has a plant worth $3,280,000, and it has only cost the City $500,000. That is it has paid for

itself, all but a remainder of $500,000. Atlanta has water at 10 cents per 1,000 gallons, and has to bring the water eight miles. It cost them only five and one half cents per 1000 gallons to get it to the consumer which includes the interest on the improvement, pumping, filterin- depreciation and delivering, giving the City a clear profit of four and one half cents on the 1000 gallons. Knoxville can do better than that as the river is convenient and many other natural advantages. We pay out $12,000 a year for water for the City's use and yet we can't have the streets flushed occasion-
206 ally without extra pay. If the City owned its own plant the water could be put in the reservoir so cheaply that we could afford to wash the paved streets every night, and do away with sweeping. It would not only be a convenience for the City but a good investment.

"The Company now claims that it has $1200,000 invested in its plant, and yet it has been paying taxes on only $275,000. It makes no difference which way the suit is decided the City will have an advantage. If it decides that the rate fixed in my ordinance is to- high, I will introduce an ordinance which will be reasonable according to the ruling of the Court, but in any event we will be enabled to get more taxes out of the water Company. Heretofore we have been getting only $5,000, taken from the old assessment, but if the value of the plant is raised say to $750,000 it will give us about $17,000 in taxes from the plant. This will pay the City for the expenses of the lawsuit. It makes no difference which way the Court decides the City is going to be the winner.

My idea is for the City to build its own waterworks if the Company will not sell reasonably. The City has an option in the charter, but the Company has the fixing of the price. If the price is unreasonable I favor building an up-to-date plant. It will be a good investment for the City.

Fifty-four per cent. of the water plants in the United States are owned by the cities and forty six by individuals. This has all been brought about in the last few years. It was formerly the other way, but it has been found that the ownership by the City of the plants is so much more satisfactory that all are buying them. I shall certainly have the bill pased, and then submit it to the people for ratification. I believe they will vote for an issue of bonds no matter for what amount in order to get the plant in the hands of the City.

Q. How many services did your Company have on the 31st of March, 1902?

A. I am unable to tell you.

Q. Will you tell me how I can get that information?

207 Mr. CALDWELL: The plaintiff is of the opinion that this line of inquiry is not proper in this cause and excepts to this and all other questions that may be asked hereafter inquiring into the business affairs, or condition of the plaintiff Company after the 31st of March; 1901, such evidence being irrelevant and incompetent and inapplicable to any proper issue in this cause.

COMMISSIONER: If this be treated as an exception it is overruled

by the commissioner because strictly within the 9th paragraph of the special requests of the defendant. The Commissioner holds that under the original decree giving parties the right to make special requests by filing specifications, he is divested of all power to rule that the special requests are irrelevant, but must permit proof thereon, until the Court is instructed otherwise.

(The WITNESS:) I am unable to tell you.

Q. Are you not now testifying within a stone's throw of the Knoxville office of your Company?

A. Pretty nearly within that distance.

Q. Are not the Books of that Company in that office?

A. Certain books of the Company are there; I suppose the information you ask is there.

(Endorsements:) Ex. D. No. 1260. Knoxville Water Company *vs.* Mayor & Alderman of the City of Knoxville. Plaintiff'- Petition for Revision of Order of Reference. Filed. Nov. 19, 1902. J. T. Carter, Deputy Clerk.

208 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Petition of the Defendant.

Your petitioner the Mayor & Aldermen of the City of Knoxville, Tenn., respectfully shows unto your Honor, that it is essential to have your Honor rule upon certain questions to be hereinafter stated, and thereby instruct the parties and the Special Master in the taking of the evidence and stating the account ordered in this case.

The questions submitted for the Court's consideration are as follows:

I.

Your petitioner insists that its demand for the production of the books of Wheeler & Parks, for the inspection of its counsel, and for the purpose of cross-examination of Wm. Wheeler, President of the plaintiff Co. should be allowed. The Special Commissioner
209 upon exception of the plaintiff's Company's counsel, has thus far ruled against Defendant's demands for the production and inspection of these books, or of copies of the same.

In order that the materiality of these books to the present investigation may appear, it is proper to state that it appears in the record that these books will show to a very large extent the cost of material and labor that entered into the construction of the North

Knoxville plant, which was purchased by the Plaintiff Co., under contract dated Nov. 17, 1893, for Stock of the Plaintiff Co., and will likewise show the cost of large portions of the Plaintiff Company's plant inside the old City of Knoxville, constructed under said contract of 1893, and paid for in stock of the Plaintiff Co., such as the high service filter plant, improv-ments and enlarg-ments of the pumping station, extention of pipes, etc.

Under this contract of 1893, there was issued for the year 1893-1894, of stock, perferred and common, of the Plaintiff Co., in consideration of the construction of the North Knoxville plant, and other improv-ments, the sum of $347,784.17—and for the years 1894, 1895, $312,879.30, and smaller sums for subsequent years. It appears in the evidence in this case that nothing further is shown by the books of the Plaintiff Co. as regard the cost of these improvements than the fact of the issuance of stock in the above amounts.

It further appears that the books of Wheeler & Parks who, in consideration of the issuance of this stock, made said improv-ments, what was the cost of most, if not all of the material, that entered into the construction, thus paid for, as well as of the labor.

It further appears that the Wheeler of Wheeler & Parks is, at this time, the President and Supervising Engineer of the Plaintiff Co., and was supervising engineer at the time of said contract of 1893 with the plaintiff Company. It further appears that Wheeler
210 & Parks, in the stockholders meeting that authorized the making of said contract with themselves, voted more than 2400 of the 2500 shares of the Plaintiff Company's stock in favor of making that contract with themselves.

It likewise appears that Wm. Wheeler is the successor of Wheeler & Parks, and is now in possession of the books of that firm. It further appears that Wm. Wheeler who testifies in this case as to the construction cost of the plaintiff's plant, has made up his statement of construction cost, wholly by estimate, and that he refused or declined in making up the estimate to look to the books that were in his possession at the place where he was making up the estimate, and that he now refuses on the request of Counsel for the Def'*d*, to inspect those books, and state what was the cost of material as shown by those books, and by the papers in his possession, that entered into the construction of the Plaintiff's plant.

As the actual cost of the construction of the Plaintiff Company's plant is one of the material facts of this case, it will be seen that no better evidence of such cost, so far as it goes, can be found, than that afforded by these very books.

Besides these books, so far as they relate to the North Knoxville plant, were transfer-ed by deed of Wheeler & Parks to the Plaintiff Company, conveying that plant. So that in this respect, the President of this Company, who is the successor of Wheeler & Parks, and testified as to the cost of this Company's plant, including the North Knoxville purchase, is with holding the books of the plaintiff Water Co. itself. But whether these books are those of the Water Co. or of Wheeler & Parks, or of Wm. Wheeler, successor of Wheeler & Parks, the Def'*d* is alike entitled to have the same produced for

its inspection and for the purpose of cross-examination of Wm. Wheeler and to have to a reasonable extent, copies of the material portions of the same.

211 Worthheim *vs.* Trust Co., 15 Fed. Rep., 716-17.

The Courts have recognized the principle that the books of the Company are better evidence than the opinions of expert witnesses.

38 L. R. A. page 464.

62 A. M. State Reports, page 274.

"II."

The Defendant's demand, that it should be permitted on cross-examination of Elbert Wheeler, the Sec'ty & Treasurer of the Plaintiff Co., to inquire as to the construction account ope*V*ating expenses, and gains and losses of the Plaintiff Co. for the years prior to March 30, 1899, should have been allowed. The Special Commissioner cut off cross-examination of this witness, as of date March 30th, 1899, on the above questions. The witness had stated net gains and losses in gross sums since the year 1891 and up to and including 1902.

Vol. 2. pp. 18. 34 of Elbert Wheeler's Depo.

He likewise stated the construction account in gross sums from 1891-1902.

Vol. 2. pp. 25 *et seq.* Elbert Wheeler's Depo.

He had likewise stated the operating expenses in gross sums from 1891-1902.

Idem. Vol. 2. p. 42.

On cross-examination the Def'*d* sought to have these gross sums analy*ized* and explained. This was denied by the Special Commissioner, and as Def'*d* contends erroneously. The period that the Special Commissioner allows for cross-examination embraces only the period, or very little more than the period, during which the discussion and passage of the ordinance in controversy was going on, and presumably during that period the Plaintiff Company was trimming its *sales* for this controversy.

Besides the Order of Reference submitted by the Plaintiff Company, directs the Special Master to report "an itimized statement of the Plaintiff's expenses per annum, and what part of the same pertains to the property within the corporate limits of the City.

212 Again, "What would be a fair amount to allow annually for the depe*r*ciation of the Water plant and property of the Plaintiff from natural causes and by wear and use and depreciation accrued to March 30, 1901."

Likewise, "The gross revenue derived by the plaintiff from its entire water plant and property, under the rates in effect prior to March 30, 1901, and how much the same would be reduced by said ordinance of March 30, 1901."

Again, "The total revenues derived by the plaintiff from the water supplied by the plaintiff within the corporate limits, under rates in

effect prior to March 30, 1901, and how much the same would be reduced by the ordinance of March 30, 1901."

It is obvious that the Plaintiff Co., or its Treasurer becomes both witness and judge, if he is permitted to state the annual construction account and operating expenses, and gains and losses, in gross sums, and cannot be cross-examined as a witness as to the composition of those amounts.

"III."

The order of reference should, in some part of it, direct the Special Commissioner to report the actual or real value at the date of the passage of the ordinance in question, of that part of the Plaintiff Company's plant then in use and service, for the purpose of distributing water to the people of the City and environments.

Counsel will submit a brief upon these questions.

PICKLE & TURNER,
Sol. for City.

STATE OF TENNESSEE, *Knox County:*

G. W. Pickle, sols. for Def't, make- oath that the facts stated in the foregoing petition are true and that he has notified Def't's Counsel of the Making of this afft. and the filing of brief in this cause.

G. W. PICKLE.

213 Subscribed and sworn to before me this 8 day of April, 1903.

[SEAL.] J. T. CARTER,
Dept. Clerk.

(Endorsements:) Knoxville Water Company, *vs.* M. & A. of the City of Knoxville. Petition of Defendant. Filed March 28, 1903. J. T. Carter. Deputy Clerk. $30.

In the Circuit Court of the U. S. for the Northern Division of the East District of Tennessee.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Answer of the Knoxville Water Company to the Petition of Defendant, Filed Herein March, 1903.

It is denied that it is necessary for the Court to rule on the questions set up in said petition of March 28, 1903, as the Court has already ruled upon the question of the Special Master's Authority in such matters. The Court has specifically declared that the Master shall rule upon the competency and admissibility of any testimony offered, such declaration of the Court being in the order
214 amending the order of reference and being after all only a statement of a well established rule. Answering the several paragraphs of said petition in their order it is averred.

I.

That as appears from this record Wheeler & Parks were as to the North Knoxville plant, independent of the Knoxville Water Company, that they constructed a water plant and sold it to Plaintiff and if their books must be enquired into, it will be necessary for Plaintiff to go further and examine the books and accounts of the persons with whom Wheeler & Parks contracted and from whom they bought material and machinery, and the process thus started would, logically, have to be indefinitely extended. The Master has ruled and ruled correctly that it is unnecessary to enlarge and encumber this record with this mass of irrelevant matter.

As to the work done by Wheeler & Parks as contractors with the plaintiff, in the City of Knoxville proper, Plaintiff says that the City has no more right to bring the accounts and papers of Wheeler & Parks into this record than it has to bring those of any other independant contractor.

And Plaintiff says that petition now filed is in effect a bill impeaching the good faith of Wheeler & Parks and of Plaintiff and that it cannot be acted upon intelligently except after an examination of the entire record now made and hereafter to be made.

Plaintiff says that to order said books to be produced now, would be, in effect to adjudge, or preadjudge said Wheeler & Parks guilty of conduct, distinguishing them from other contractors, when there is nothing in the record, or out of it, to support such a judgment.

It is true that Wm. Wheeler is successor to Wheeler & Parks and that he is now Supervising Engineer and President of the Plaintiff Company, and has long held such positions, but it is equally
215 true that this record shows him to be a man of high character and one who has been in all respects scrupulously exact and honorable in his dealings with the Company. And plaintiff denies that there is any thing to justify the Court, at this stage of the proceedings, in taking any action that reflects upon or impeaches the good faith and fair dealings of said Wheeler, and it avers also that by granting the application now made, the Court would in effect adjudge upon this incomplete record that there has been improper conduct on the part of Wm. Wheeler, of Wheeler & Parks and of Plaintiff. Plaintiff insists that the action now asked of the Court is in effect a decision of a part of the cause, and a reversal of the Master before the Master has reported.

It is respectfully submitted that the Court having specially declared the law, that the Master shall rule on questions of admissibility of evidence, the Master's rulings must stand until reported by him with his reasons therefor and his action upon exceptions thereto, presented to him before being presented to the Court. It is averred that it is not just to the Master to ask that his rulings be reversed without a full examination of the record, and it is believed that the Court will not go into the record, and certainly will not try the cause piece meal.

It is denied that the record in any respect impeaches the conduct of William Wheeler or of Wheeler and Parks.

It is true that William Wheeler's estimate of the present invested value of the Plaintiff's Plant was made without consultation of the Company's books. It is also true that four expert witnesses in the cause have sworn to the sufficiency and accur-cy of his method, and, in this connection, the present application, in effect seeks a determination by the Court that said method so indorsed is improper, or at least insufficient. Where as plaintiff insists now, and will insist on the hearing that it is the only proper method.

216 It is earnestly insisted further that the Court cannot act on this point, with justice to Plaintiff without a careful examination of William Wheeler's testimony and of that of the other expert witnesses. Plaintiff shows that the method of William Wheeler was to ascertain the present value of the plaintiff's plant by a careful and most minute inquiry into the present value of each particular part and element of the entire plant. This inquiry, covering approximately one hundred pages of the record, is most thorough and exhaustive and an examination of it will convince the court that it is correct in principle and in results. It determines upon ample experiences and perfect knowledge the value of the whole, and of every part of the plant, down to the minutest part.

It is upon this present value thus minutely and convincingly demonstrated that Plaintiff asks relief in this cause. It asks nothing on account of the book value or cost, because it is conceded that book cost twenty years ago, must vary greatly from present actual value, and it is present actual value only that the witness William Wheeler has ascertained and set out. And in this connection Plaintiff shows, from the record that as to the first eight years of the life of the Company, there are no data from which an accurate or approximately accurate statement of book cost can be obtained and if book values were considered of any effect as to subsequent years for the purposes of this inquiry, it would be impossible to harmonize the actual values which alone can be determined for the first eight years with book values for the remaining time, and the result of the method insisted upon now by defendant would be palpably false, and the parts inconsistant with themselves. There is positive swearing of expert witnesses in the record to support the assertion contained in the last sentence.

Again Plaintiff says that the obvious implication of the allegation of the Defendants' petition as to the books of Wheeler &

217 Parks is, that Wheeler & Parks made large profits, which is not conceded, but which if it were true, would be of no effect herein, because Plaintiff asks no allowance on that account but stands on present actual values as they are indisputably shown in the testimony of William Wheeler and other competent expert witnesses.

As to stocks and bonds issued, Plaintiff likewise says it bases its appeal to this court upon actual values reaffirming that these actual values are not only declared, but demonstrated in the testimony of its expert witnesses.

Referring to defendant's expressed desire to cross examine William Wheeler, Plaintiff shows that William Wheeler has been

on the witness stand already for about three weeks, most of the time under cross examination. Elbert Wheeler, Plaintiff's Treasurer, has been on the stand about eight days, most of the time under cross examination, and F. C. Kimball, Superintendent, has been on the stand six days, most of the time under cross-examination. While Elbert Wheeler and F. C. Kimball were being examined, all the books of Plaintiff were opened to Defendant's Counsel, and are now open to Defendant for expert accountant and engineering examination on all proper subjects and questions. Plans and specifications of Plaintiff's building have been brought from Boston, Massachusetts, for Defendant's examination, and every facility for examining into Plaintiff's affairs has been afforded Defendant. A record of twelve hundred and fifty (1,250) typewritten pages has already been made in this cause, and unless some reasonable limit be put to the investigation, (as to subject matter) the record will become not only excessive in quantity, but intolerably irrelevant in quality in many points. It is averred that Defendant has enjoyed not only full, but excessive liberty of inquiry already, and has unnecessarily and improperly encumbered the record with immaterial, irrelevant, and wo-thless matter.

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II.

As to construction account, the Defendant clearly had the right to examine Plaintiff's record from the beginning of Plaintiff's operation until the latest date allowed under the order of reference, and it was so conceded by Plaintiff, but as to the operating expenses the Master has correctly limited Defendant's examination to a number of years sufficient to make the test required in this cause.

Defendant has been allowed to examine into operating expenses from March, 1899 to September, 1902. A period of three years and a half, which was longer than was considered necessary in the Chattanooga case. The record will show that Defendant refused to go into the construction account back to the beginning of Plaintiff Company's operation unless also allowed to go into the examination of operating expenses during the whole of said time. Attached hereto as Exhibit "A" is a part of the record showing what occurred in this connection, which shows that Plaintiff tendered to defendant its books, etc., for the purpose of investigating the construction account from the first until now, and that, Defendant's counsel refused to go into the construction account, unless the Master would also allow him t- go into the entire operating expense account from the first. The witness Elbert Wheeler, Treasurer of Plaintiff, and the books of the Company were tendered Defendant for an examination of the entire construction account, as said exhibit "A" hereto shows. When Defendant refused to make the investigation Elbert Wheeler returned to Boston, Mass., his home, taking with him the books of his office, or such of them as are kept at the Boston Office, of the Company and now Defendant files its petition saying that it "should be permitted on cross examination of Elbert Wheeler, the Secty., and Treasurer of Plaintiff Company, to inquire as to the Construction account, operating expenses and gains and losses of the Plaintiff Co., for the

years prior to March 30, 1899, should have been allowed the
219 special commissioner having, cut off cross examination of this witness as of March 30, 1899 on the above questions." (*Sic.*)

Exhibit "A" hereto clearly shows that so far as the construction account is concerned, the allegation just quoted is absolutely inaccurate, and it is insisted that as to operating expenses the Master was clearly right in his holding.

Plaintiff now insists that Defendant has waived and lost its right to examine the construction account any further and it stands upon its rights in the premises. It insists that upon the hearing before him, the Master has the powers of the court, and must be respected accordingly, and if the construction account had been tendered Defendant and examination of it refused on a hearing before your Honor as it was refused before the Master, Defendant certainly would not be allowed a further opportunity to examine it. Defendant has in effect said to the Master, that it would not proceed with the matter except in its own way. It is insisted that the proper course for Defendant was to go into the construction account when the opportunity was afforded, and if dissatisfied with the Master's ruling as to operating expenses, to reserve its exception and insist upon same at the hearing before your Honor on the Master's report.

Plaintiff insists upon its right to have this cause condusted accordingly to the established practice of this court, and that Defendant should conform thereto.

Plaintiff avers that it has adduced competent and convincing testimony in response to every question in the order of reference, which order has been considered twice by your Honor, and Plaintiff has, since Defendant's present petition waw filed, closed its case — chief, and it insists that it has the right to have the cause proceed in the ordinary and regular manner, without irregular and unfounded applications such as the present one by Defendant.

III.

220 Answering specifically as to the assignment of accounts and records, by Wheeler and Parks ro Plaintiff, it is shown that said assignment included only such accounts, books, etc., as it was necessary for Plaintiff to have in order to take up and carry on the business of furnishing water to the people of North Knoxville, theretofore carried on by Wheeler & Parks. It did not include the private records of Wheeler and Parks covering their personal transactions with manufacturers and others, which are the documents which Defendant now insists it has the right to examine. Such books and papers were retained by Wheeler & Parks, were not conveyed to Plaintiff and have never been in its possession or claimed by it. Such was the understanding of the parties, and such is the necessary construction of the contract as your Honor will see by an examination of the record, which is referred to. The allegation to the contrary in Defendant's petition is denied, and the record is relied on confidently to show that said books and accounts are the private property of men who are not parties to this suit.

IV.

Referring again to Defendant's allegations in said petition to the effect that it has a right to cross examion Plaintiff's Treasurer as to items of operating expenses prior to March, 1899. Plaintiff, did get from the Treasurer the gross amounts of operating expenses for the years 1892 to 1902 inclusive, and this is all, and more than it was entitled to, ans was all that the Master considered necessary or permitted and it is submitted that the court will not now overrule the matter.

V.

The allegation on page five of the petition to the effect that during the period covered by the testimony as to operating expenses plaintiff was "trimming its sails for this controversy" is denied as un-
221 true and unfair, and is an illustration of the suspicious and unfair attitude and method of defendant in the conduct of this cause. During the early part of the period referred to, the relations between the parties were friendly and the charge that Plaintiff has ever shaped its proceedings or accounts with a view to this litigation is denied as wholly untrue.

VI.

The allegation on page five of the petition in regard to that part of the order of reference which calls for "an itemized statement of the Plaintiff's expenses per annum and what part of the same pertains to the property within the Corporate limits of the City"; also the succeeding allegations in regard to depreciation; in regard to gross revenue, and the effect upon such revenue, of the contested ordinance; also the allegation as to Plaintiff's total revenue within the City and the effect of said ordinance upon it, all seem intended to convey the impression that these matters have not been inquired into, when in fact the testimony as to each and every of said questions is explicit and full and contains everything necessary for the proper determination of said questions, and all that the Master required.

VII.

Plaintiff calls attention to the fact that the paper filed March 28, 1903, entitled a "petition" and so styled herein, is not verified by affidavit of any one, but is merely signed by counsel, that it not in a form known to the practice of this court being a compound of pleading, brief and argument, containing hardly less argument than allegation, and containing citations of authority.

It is again insisted that said so called petition is, more nearly than anything else, an exception to the Master's report before the report is filed. It appears to be almost entirely a criticism of the Master's action, and a request that the court having committed this cause to a Master shall intervene in the midst of the hearing and, in
222 effect, take it from the Master.

If this application should be sustained, such action logically, would be a precedent justifying either party in appealing to

the Judge whenever dissatisfied with the Master's rulings. Plaintiff has excepted to certain rulings of the Master and objected to many questions which he has admitted, but it has never supposed that it had the right to stay proceedings in the cause now by an appeal to the Court.

VIII.

It is proper for Plaintiff to add that its testimony is thorough and detailed to an extent which is believed to be unprecedented in cases of this kind, and that Defendant has cross examined its witnesses for periods aggregating not less than one month, having free access during the examination of the Treasurer and Superintendent, to all Plaintiff's books, and Plaintiff says that the record in the cause is already, on account of Defendant's methods, much larger than the completed record should have been, and contains much irrelevant matter, introduced by Defendant, and Plaintiff earnestly resists the present application for more irrelevant matter, and all unnecessary enlargement of the already enormous and cumbrous record.

It is insisted that Defendant has no right to have the precedure in this cause conformed to its own suspicious, unjust and unreasonable attitude toward Plaintiff, and that it has no more right than any other litigant to ask a departure from the fixed and proper practice of this court. And now having fully answered, Plaintiff prays that said petition of March 28, 1903 be dismissed and that Defendant be taxed with the costs resulting therefrom, Plaintiff has not seen the additional brief referred to in Defendant's petition.

CHAS. T. CATES, JR.,
J. W. CALDWELL, *Sol's.*

223 STATE OF TENNESSEE,
Knox County, Eastern District of Tennessee:

Frank C. Kimball, makes oath that he is superintendent of the Knoxville Water Company and that the statements made in the foregoing answer are true to the best of his knowledge information and belief.

FRANK C. KIMBALL.

Sworn to and subscribed before me April 3, 1903,
[SEAL.] JNO. F. EDINGTON, *N. P.*

EXHIBIT A.

Page- 144 *and* 145 *of Testimony of Elbert Wheeler, Treasurer.*

Mr. PICKLE: The defendant by counsel excepts to the action of the Master in refusing to permit inquiry on cross examination into the construction and operating expense accounts for any years prior to 1899, and declines to finally close the cross examination of this witness until it is settled by action of the Court whether such inquiry is proper.

Mr. CALDWELL: The Plaintiff by counsel, and not understanding that the Court has at any time excluded examination into the construction account for any year hereby tenders the entire construction account of the company as a part of the testimony of this witness to the defendant for examination.

Mr. PICKLE: Thereupon counsel for defendant asked if he would open the operating expense account in like manner and this was declined.

Mr. CALDWELL (to General Pickle): I beg pardon; I do not want records made for me by anybody. I am ready to submit that question to the Court.

COMMISSIONER: It is a fact that he asked you for them, and you declined, Mr. Caldwell.

Mr. CALDWELL: Why yes, I have no objection to his going into the record for the reason that the Master has already permitted an examination into the operating expenses for a period
224 which he considers sufficient for the purposes of this case.

COMMISSIONER: The defendant declines to examine the witness as to Construction account unless he be permitted to examine him in regard to the operating expense account in the years excluded as above by the Master.

Mr. PICKLE: Counsel for defendant states that he declines on account of the fact that he is not permitted to go into the operating expense account and that it is only by comparison of the two accounts that any intelligent cross-examination can be made.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* M. & A. of the City of Knoxville. Answer of Plaintiff to Defendant's Petition of March 28, 1903. Filed April 3, 1903. J. T. Carter, Deputy Clerk. C. T. Cates Jr., J. W. Caldwell, Sols.

No. 1260. In Equity.

225 In the Circuit Court of the U. S. at Knoxville, Tenn.

KNOXSVILLE WATER COMPANY
v.
M. & A. OF KNOXVILLE.

Petition of the Defendant.

To the Honorable H. O. Ewing, Special Commissioner and Examiner is appointed under order of the Court in the above styled cause to hear evidence and report:

The Defendant, the Mayor & Alderman of the City of Knoxville, respectfully show- unto the Special Commissioner-Examiner, that some difficulties and obstacles have been presented to the preparation of the Defense in this cause.

They are as follows:—

1st. It appears from the testimony of Elbert Wheeler, the Treasurer of the Plaintiff Water Company, that Wheeler & Parks, and

Wm. Wheeler, as successor of Wheeler & Parks, constructed, under contract with the Water Company the North Knoxville plant, as well as large portions of the Company's plant within the City limits of the City of Knoxville proper, and that the books of the Plaintiff Water Company, show nothing whatever of the cost of these con-*srt*uctions, the same having been paid for by the issuance of the stock of the Company, and that fact alone entered on the books of the Plaintiff Co. It is essential that the Defendant's experts, now engaged in making up the construction cost of the Company's plant, for the purpose of fixing the actual value thereof, should have access to the books of Wheeler & Parks, and of Wm Wheeler, to the extent of inspecting and obtaining information from such parts of said books, as show the cost of material and labor that entered into the North Knoxville plant, and such portions of the Plaintiff's plant within the City of Knoxville proper, as were constructed by Wheeler & Parks or Wm. Wheeler, under their contract with the Plaintiff.

226 These items are estimated by Wm. Wheeler in his testimony, who refuses to produce the books or to look to them and give the information asked for. More than $7,000,000.00 of the indebtedness of the Plaintiff Company arose out of the alleged cost of these items, as appears from the depositions of Wm. Wheeler and Elbert Wheeler.

The Wheeler & Parks and Wm. Wheeler books alone show the actual cost of such construction. The Commissioner or Examiner, is asked to require Wm. Wheeler, who admits himself to be the custodian of these books, to permit an inspection of the same, and to permit the defendant's experts to obtain copies of the same, to the extent that they show cost of construction of the Plaintiff's plant or parts thereof, under proper direction of the Commissioner-Examiner.

This has been asked for the purpose of cross-examining the witness, Wm. Wheeler. The Defendant now proposes to go to Boston, Mass., where said books are located, and ask the Special-Commissioner to there compel the production of said books, but in view of the Commissioner's former ruling the defendant desires, before incurring expenses of a trip to Boston, to know whether the Commissioner will, upon a proper proceeding, require the books to be produced by said Wm. Wheeler.

2nd. The Defendant's experts have been denied inspection and the privilege of taking copies of the operating expense account of the Plaintiff Company, for any year prior to 1899. And this in the face of the fact that Elbert Wheeler has for all years, beginning with 1891 or 1892, given the gross amount of the annual operating expense. The Plaintiff, through its att'ys and agents, denies to the defendant's experts, the liberty of examining said books, or obtaining any information as to the items and contents of the operating expense account, prior to 1899. These books were tendered by counsel on the cross examination of Elbert Wheeler, and

227 it was stated by the Commissioner, that the defendant's experts would be permitted to examine them. The Plaintiff

Company has changed its position, and now denies, as above stated, the inspection and copies of these books, to the Defendant's experts or counsel.

The defendant asks that these books be required to be produced and submitted to the examination of the defendant's experts and counsel.

The part of the record bearing upon this question, is the Deposition of the witness Elbert Wheeler, Tr., pp. 18 24-28, 42, 84, 144 145.

The petitioner prays that the above matters may be determined, and specific ruling made therein by the Special Commissioner-Examiner, for the direction of the Defendant, in the further preparation of its expert and other evidence.

PICKLE & TURNER,
Sols. for Def't.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* M. & A. of the City of Knoxville. Petition of Def't to Spl. Master. Filed June 24, 1903. J. T. Carter, Deputy Clerk.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

The Answer of the Knoxville Water Company to Defendant's Petition to the Special Master.

228 I.

The question of the admissibality and materiality of the books of Wheeler & Parks, as evidence in this cause has been passed upon repeatedly by the Master, who has uniformly held that said books are not admissible and has refused to compel their production. The Master is in full possession of all the reasons why Plaintiff does not regard these books admissible and there can be no reason for renewing the statement here. Plaintiff does not admit that the present application in regard to the books of Wheeler and Parks is the proper procedure to secure production of same, and declines to make any further answer, and expressly reserves all its defences and rights in the premises, and will rely on each and every of them to the fullest extent. It is submitted that the Master can take no action as to Wheeler & Parks' books on this application.

II.

As to the right of Defendant's accountant to examine the books of the Plaintiff as to the operating expenses of the Water Company from 1882 to the present time. Plaintiff says that upon this point also the Master has indicated what he regards as sufficient testimony, and whatever construction may be put upon language of Plaintiff's Counsel at any point in this long record, the question is

one which it is proper to determine now. We think the testimony called for irrelevant and useless.

The Master's ruling as understood by Plaintiff is that Plaintiff has already furnished all the evidence on this point that is needed or proper. On page 60 of Elbert Wheeler's deposition the Master said, "The witness will hereafter furnish one other year for comparison and only one other. If another year is asked for it will be overruled." This follows the first remark of Plaintiff's counsel which is construed by Defendant as "tendering" the books of the Company.

229 The statement here allowed by the Master appears on page 61 of Elbert Wheeler's deposition. It will further appear from the last paragraph on page 61 of Elbert Wheeler's deposition that at this point Defendant's Counsel wished the witness to furnish only two years more.

On page 81 of Elbert Wheeler's deposition the Master held that an itemized fuel account for 1899-1900 was not required.

On page 84 of Elbert Wheeler's deposition the Master said on this point:—"We now have three years and six months given, and I rule that is enough, and I sustain the exceptions to any further inquiries on that subject"—and this follows the remarks of Plaintiff's Counsel on page 82 and 84 relied on by Defendant. On page 144 of Elbert Wheeler's deposition Defendant's Counsel said: "The Defendant by Counsel excepts to the action of the Master in refusing to permit inquiry on cross examination, into the construction and operating expense accounts for any years prior to 1899, and declines to finally close the cross examination of this witness until it is settled by action of the Court whether such inquiry is proper."

Thereupon Plaintiff's Counsel tendered the entire construction account, and after remarks by Counsel on both sides Defendant's Counsel said: "The Defendant declines to examine the witness as to construction account unless he be permitted to examine him in regard to the operating expense account in the years excluded as above by the Master."

Dep. Elbert Wheeler P. 145.

From this language it would seem clear that the Master refused to allow the witness to cross examine at all in regard to operating expenses prior to 1899. Defendant was not at this point calling for tabulated statements, or anything else entailing special labor on the witness, but only for the right to cross examine.

230 Upon this understanding Plaintiff bases its present insistence. The ruling of the Master seems to be unmistakable whatever Counsel may have said at previous stages of the proceeding.

If plaintiff has misunderstood the situation, it may be corrected by the Master.

J. W. CALDWELL,
Sol. for Plaintiff.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* Mayor & Alderman of Knoxville. Answer of Plaintiff to Def't's Petition to the Master. Filed June 24, 1903. J. T. Carter, Deputy Clerk. C. T. Cates, Jr. J. W. Caldwell, Sol's. No. 3867. The Knoxville Water Company *vs.* Board of Mayor & Alderman. The Knoxville Water Company *vs.* The Board of Mayor & Alderman, Original Bill. Filed June 15th, 1885 S. P. Evans, C. & M. By W. A. Galbraith, D. C.

To the Honorable W. B. Staley, Chancellor &c. sitting in Chancery at Knoxville, Tennessee:

231 The bill of complaint of the Knoxville Water Company, a body politic and corporate organized under the laws of Tennessee having its office and principal place of business in Knoxville, Tennessee, filed in Your Honor's Court *vs.* The Mayor & Alderman of the City of Knoxville, a body politic and corporate under the laws of Tennessee, having its principal place of business in Knoxville, Tennessee.

Therefore, humbly complaining your orator will show unto Your Honor, that pursuant to an agreement entered into between it and the defendant, it has erected in the City of Knoxville a system of water works for the purpose of supplying the defendant and the inhabitants of the City of Knoxville with water.

The defendant agreed and obligated itself to take water from your orator for at least seventy five full plugs or hydrants and to pay for the same at the rate of fifty ($50) dollars per year each, the rent to be due and payable quarterly.

The works were completed and seventy five hydrants were erected, and the water turned on in accordance with the agreement on the 4th, day of June 1883, since which date your orator has continuously furnished the defendant with water for said seventy-five hydrants for fire purposes and for flushing gutters of the streets of the said City of Knoxville.

In addition to said seventy five hydrants, the defendant by its proper office-s and agents has ordered seven (7) additional hydrants erected, five of which were erected and begun to be supplied with water on April -st, 1884, and the other two erected and began to be supplied with water on Jan'y 1st, 1885.

232 Bills have been duly made and rendered to the defendant each quarter for the rental due your orator on said hydrants. The amount of the principal sum due to your orator from the defendant to the end of the quarter ending June 4th, 1885, amounted to the sum of Seven Thousand Eight Hundred and Thirty four (7834) and 45/100 Dollars as is fully shown by a statement of the account which is herewith filed marked exhibit "A" and is asked to be taken and heard as a part of this bill. To the several sums due on said account as shown in exhibit "A" your orator is entitled to have interest added from the dates said sums respect*fu*lly fall due.

In addition to the fifty dollars rental for said hydrants to be paid

quarterly as aforesaid, the said defendant agreed to pay as additional rental for said hydrants each year a sum that would be equal to the City taxes assessed by defendant against your orator for the first five years after the completion of said water works. The City taxes assessed against your orator for the year 1884, amounted to the sum of Four hundred and One (401) and 77/100 Dollars, which amount was paid by your orator on May 22, 1885, to the Defendant.

The hydrant rental and the taxes paid as aforesaid together with the interest thereon remains due and unpaid, and is justly due to your orator from the defendant, and the defendant neglects, fails and refuses to pay the same, although it has often been requested so to do.

The defendant has had the use of the water so furnished it by your orator, from June 4, 1883, for fire purposes, and all other purposes required by defendant, and has actually used it, and by means of the water so furnished the defendant and the inhabitants of the City of Knoxville have been greatly benefited, as many dan-
233 gerous conflagrations have been presented and much valuable property saved from destruction by fire by the use of your orators water.

The defendants fire department was furnished with the keys to the fire plugs or hydrants by your orator, and the defendant has with a full knowledge of the fact that its said fire department had said keys permitted it to retain possession of them and use your orator's water every time it has had occasion to use the water for any purpose.

The water used by the defendant is furnished to it at great cost and expense to your orator, and in the face of all that is just and honest the defendant still continues to use the water and absolutely refuses to pay for the same.

Therefore, considering the premises your orator will pray as follows:—

I.

That the party named as such in the caption be made a party defendant to this suit by apt words and due process and be required to answer this bill full and truly, according to the practice of this Honorable Court.

II.

That on hearing your orator have a decree against the defendant for the full amount of hydrant rental due it as shown by exhibit "A" including the amount paid for taxes for 1884, together with interest on the various sums from the date they became due respect*fully*.

III.

If it has mistaken its remedy it will pray for all such other, further and general relief as it may be entitled to in equity and good conscience.

TAYLOR & HOOD,
Solicitors.

The Board of Mayor & Alderman of the City of Knoxville,
234 To the Knoxville Water Company, Dr.

1883.			
Sept. 4.	To 1st qr.'s rental of 75 hydrants at $12.50	.....	$937.50
Dec. 4.	2nd " " " " " "	.....	937.50
1884.			
M'ch 4.	3rd " " " " " "	.....	937.50
June 4.	4th " " " " " "	.....	937.50
" "	" " " " 5 hydrants from April 1	.....	42.55
Sept. 4.	5th " " " 80 hydrants at $12.50	.....	1000.00
Dec. 4.	" " " " "	.....	1000.00
1885.			
M'ch 4.	7th " " " " "	.....	1000.00
" "	" " " 2 hydrants from Jan'y 1	.....	16.90
June 4.	8th " " " 82 " at $12.50	.....	1020.00
	Rental of hydrants equal to	.....	7834.45
May 22.	" City Taxes paid for 1884	.....	401.77
			$8236.22

Exhibit "A."

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

Plea. Filed June 25, 1885.

The plea of the Mayor & Alderman of the City of Knoxville to the bill of the Knoxville Water Co., filed against it in Chancery at Knoxville.

This defendant by protestation, not confessing or acknowledging the matters and things in and by said bill set forth and alleged to be true in each manner and form as the same are thereby and therein set forth and alledged, for plea saith that complainant at towit: on July 1, 1882, the date of the alledged contract with defendant had no other or different charter than a supposed charter under
235 and by virtue of an act of the Legislature of Tennessee approved March 27, 1877, being Chapter Civ., p. 127, Act of Tennessee, 1877, a certified copy of which supposed charter is herewith filed as part of this plea marked exhibit "B" to show its supposed powers, privileges, emmunities duties and franchises, and that the said complainant had not prior to the time when said charter purports to have been granted, nor prior to July 1, 1882, the date of the alleged contract with defendant, been granted leave by the corporate authorities of the City of Knoxville, the City named wherein it proposed to establish and connect water works, to operate under such charter, nor was any such leave to operate under such charter, certified by the Mayor or Recorder of said City of Knoxville upon its application for or the alleged charter and registered

with such application or Charter. Therefore the defendant prays the judgment of this Honorable Court, whether it shall be compelled to answer complainants' bill and humbly prays to be dismissed with its reasonable costs &c.

L. A. GRATZ,
LUCKEY & YOE,
Sol's for Def't.

STATE OF TENNESSEE, *Knox County:*

Comes J. C. Luttrell, Mayor for Defendant and makes oath that the above plea is true in substance and in fact.

JAS. C. LUTTRELL.

Sworn to and subscribed before me June 25, 1885.
W. A. GALBRAITH, *D. C. & M.*

Answer of Mayor & Alderman of the City of Knoxville. Filed Aug. 3, 1885.

The separate answer of the Mayor & Alderman of the City of Knoxville to the Bill of the Knoxville Water Company filed against it in the Chancery Court at Knoxville.

236 Saving and reserving unto itself the usual benefit of exceptions, not waiving its plea but relying on the matters thereof for answer unto said bill says:

It is not true that complainant has erected a system of Water works in the City of Knoxville for the purpose of supplying it and its inhabitants, pursuant to an agreement entered into between compl't and defendant, It is not true that defendant contracted and obligated itself to take water from complainant for at least 75 hydrants and to pay for same at rate of fifty dollars per hydrant and payable quarterly, if it is meant by this charge that defendant agreed to take water from hydrants under such a system of water works, as compl't has erected will be more fully hereinafter shown. It is not true that water works were completed and seventy-five hydrants erected and water turned on in accordance with agreement with this respondent on June 4, 1883, nor is it true that compl't has since said date continuously furnished water for said hydrants for fire purposes, flushing streets &c. Nor is it true that defendant by the proper officers ordered seven additional hydrants, nor that they were ever erected and water furnished as alleged in bill. Nor is it true that defendant was indebted to compl't at end of quarter ending June 4, 1885, in sum of $7834.45 or any other sum, nor that compl't is entitled to interest on this or any other sum. Nor is it true that defendant contracted to pay an annual additional rent for fire five years equal to taxes for any such works as those upon which defendant has assessed taxes &c. defendant denies that compl't has any right to recover of defendant taxes paid for 1884 as aver-ed. It is not true that defendant has used water as averred or that many dan-

gerous conflagrations and much valuable property has been saved thereby. If defendant's fire department was furnished with keys to fire plugs or has used water, it has been without authority of respondent and compl't well knew this fact and that defendant re-
237 fused to use or receive water works or water and if water was ever used it was under the police powers of defendant, or by the express direction of officers or Agents of compl't and not under or pursuant to any contract or agreement between compl't and defendant, nor by any one authorized to bind defendant, or render it liable therefor. It is not true that defendant continues to use water, in the face of all that is just and honest? and absolutely refuses to pay for the same.

Defendant has refused to pay the unjust demands of complainant and respondent states that accusations and charges of dishonesty by complainant against Respondent are not only false, but come with poor grace from complainant and reminds respondent of the old cry "stop thief."

Respondent further answering states that compl't has unintentionally or carelessly omitted to state all the facts and points out of which grew the differences between it and respondent, and it will now state the most material, in order that the Court may see and determine accordingly to the right. Respondent is a Municipal Corporation and can only act through its Board of Mayor & Alderman. For some time previous to June 1882, considerable discussion had been had in reference to waterworks for the City of Knoxville, and it did at one time employ one Moses Lane, a Civil Engineer to prepare plans and specifications for water works for the City of Knoxville, and said Moses Lane did prepare for respondent plans, specifications with map of City. At that time defendant contemplated building water works for itself, but it was not done. After this various propositions and steps were taken with the view to building works, and defendant did at one time enter into a contract with one W. B. McDonough & Co. for building works, but it failed for reasons not necessary to mention.

238 At all times after said Moses Lane plans, specification &c. all discussion plans &c. were based upon what had then commonly become known as the "Moses Lane Plan" referring to plans and specifications furnished by Moses Lane to respondent.

On or about June 12, 1882, propositions were submitted to defendant by different parties for building water works among others one by one S. E. Cook, Manager for complt. On or about June 16, 1882, the various propositions were voted upon and all at first rejected. The proposition of the said Cook, Manager &c. was to build water works equal to that contemplated by the specifications of Moses Lane supplemented by S. H. Lockett. On the 16th of the same month, a committee of defts. board recommended that proposition of S. E. Cook, managing director of the Knoxville Water Company, be adopted with the understanding that they are to adhere to the Lane Plan strictly, and ignore the Lockett Supplement. The proposition finally voted on was to accept the Cook proposition, with the modifications and requirements meaning that said Company should adhere "strictly to Moses Lane Plan and ignore the Lockett Supple-

ment." There was fifteen votes cast on this proposition being 9 in favor and 6 against. By these votes is meant that 9 Alderman were recorded as voting for the proposition and 6 against it. Respondent now shows that this motion was made by John Brooks, who was at that time a Charter member, (if it had a charter) of complt. the Knoxville Water Company and he and two others of the Alderman are recorded as voting to accept a three as respondent beleives were interested in the Knoxville Water Co., and it is advised that they had no right to vote on said question, that the said proposition was not therefore legally accepted and is not binding upon respondent.

239 Respondent further answering says that a contract between it and complt. was prepared & signed by its officers and which modified the agreement at first made and the modifying clause provides that the water works "shall be built and constructed in accordance with the plans, specifications drawings of Moses Lane, with a single exception, that is to say instead and in place of the Stand Pipe for fire purposes at the Reservoir as required and contemplated by the plan and specifications of Moses Lane, the said company shall construct and establish at the Reservoir a system of by pass pipes, by means of which the water in case of fire may be directed into the proper main by the direct pressure of the Engine of the works."

In one of the clauses of the agreement appears the following "the said works and every part thereof to be of the best standard material and constructed in a proper and workmanlike manner, not inferior to or less capacity but in every way as good, amply, substantial and of equal dimensions as contemplated and required by the specifications schedules, drawings, maps, and details prepared for the City by one Moses Lane, nor shall any of the mains, pipes, hydrants, buildings, machinery, pumps, and other appurtenances be of quality inferior to that contemplated by said plans and specifications schedules, drawings, maps and details, a copy of which is now on file in the office of the City Engineer, and is hereby referred to and made part of this agreemnet.

In one other part of said agreement the map of the City by Moses Lane is also referred to and made part of the agreement. Respondent now avers that it and its Alderman, Officers and Agents, understood that the plans specifications, maps details and etc., in said agreemnet contracted for and mentioned were the plans, specifications, maps, details originally prepared by the Moses Lane for de-

240 fendant and that these were filed with the contract by and between compl't and defendent and the bond made by compl't to comply with its contract, a memorandum showing the number of feet and weight of each class of pipe, commencing with 20 inch pipe running down to four inch, required by the Moses Lane Plan. Said contract by its officers and memorandum will be filed in evidence on the hearing, if necessary. Respondent will also file a copy of the plans, specifications &c. prepared by Moses Lane, the original having been lost or are in possession of compl't or some of its officers and agents. When compl't commenced to build water works, respondent through its officers discovered that compl't was not building as required by its contract and demanded compliance or that work should cease. Compl't then produced the contract

once entered into by and between respondent and W. B. McDonough & Co. and claimed that it was the Moses Lane plan, specifications &c. contemplated by its contract and respondent now avers that if compl't was honest and sincere in its said claim then compl't and respondent never concur-ed nor came to any agreemnet or contract, as the plans and specifications &c. as contracted by respondent and compl't were wholly various and different. Respondent further avers that if the paper exhibits and claimed as the Moses Lane plans, specifications &c. by compl't was the paper to which compl't referred in the so called contract, as copy being in Engineer's Office, then it was a fraud on respondent, as compl't through its officers and agents well know it was not the plans and specifications &c. of Moses Lane as contemplated by respondent & its assent to same was given by mistake and was superinduced by fraud and suppression of facts. The contract between compl't and defendant if there was a contract contained many stipulations on both sides and respondent was not and is not bound to accept or pay for water or rent therefor, until complainant has first complied with its part of the contract and respondent here avers and pleads that complainant has
241 not, in any sense complied with a single one of the material stipulations upon its part in said agreement if an agreem-nt.

Respondent cannot now, nor does it deem it material to do so, state all of the particulars in which compl't has failed to comply with its contract (if there was a contract) but it avers that it has not complied in the following particulars:

1. It has not built water works according to Moses Lane plans, specifications as contracted.

2. The said works and every part thereof are not of the best standard material.

3. The pipes are of less capacity than those required and contemplated by Lane's plan.

4. The said works and every part thereof are not as good, ample, substantial and of equal dimensions as contemplated and required by the specifications, schedules, drwaings, maps, and details prepared for the City by one Moses Lane, nor are the mains, pipes, hydrants, buildings, machinery, pumps, and other appurtenances of quality equal to but are inferior to that contemplated by said plans, specifications, sxhedules, drawings, maps, and details.

5. Complainant never has built or erected a reservoir as required by its contract, of capacity and in manner and of material as required by contract.

6. Compl't has not and cannot now furnish good and wholesome water for use of inhabitants of Knoxville as contemplated and required by contract.

7. Compl't has never built or erected a reservoir, or furnished water through or out of Reservoir as contemplated by contract, but such water as it has furnished has been almost at all times muddy and not wholesome and has not passed into or out of reservoir, but direct from river, whether muddy and unclean or otherwise.

8. The pipe put down has been and is of less weight, less capacity of inferior material than those contemplated by contract

242 and were not put down and placed on streets as contemplated and shown by map of City prepared by Moses Lane.

9. Hydrants or fire plugs were not placed and located as required by contract and in many instances, they were place- so near buildings as to be practically worthless and unfit for purposes intended in case of fire.

10. Complainant contracted to repair, replace and restore all streets, lanes alleys, ways and sidewalks and put them in as good condition as before and utterly failed so to do, and defendant was compelled to expend large sums on its streets in consequence of compl't's failure.

1. One inducement to defendant's agreement was future purchase of water works to be built at a cost of $125,000.00 to $150,000 and complainant agreed not to assign its contract and to keep and supply water for thirty years, and yet compl't did not build such water works as respondent contemplated purchasing and has assigned its contract and all rents and profits for the whole thirty years, and has mortgaged all its property, with power in trustee to sell in New York City, in certain contingencies long prior to end of thirty years, thus making it possible if not probable that compl't could not sell to respondent as contemplated by the contract.

12. The workmanship, the material, the water now being furnished citizens are all bad, all inferior to what was contracted for and is inferior to that contemplated even by McDonough & Co. contract. Pipes are of less weight, less capacity and dimensions, are no standard, are rusty, rotten, unsound, full of lumps and thin places, and in every sense inferior to those contemplated by contract.

Respondent repeatedly demanded that compl't should comply with its contract, tendered money rec'd for property and demanded a rescission. It notified complainant before it had progressed far with its work that it was violating its contract and that it
243 would not receive the works or pay its stipulated rents unless it complied with its contract, and never has admitted its compliance with contract, but has always denied it and never has received or used water or in any way recognized its liability and it again avers that it does not owe complainant anything upon any account whatever and it is advised and will insist that complainant cannot compel it to receive or pay for rent of hydrants or otherwise until complainant complies with and performs its part if said contract or agreement, and pays to respon't all damages for failure to perform its part of the contract within the time stipulated in the contract or agreement (if there was any contract) and respondent submits to the court the question as to whether there was any contract under all facts of case.

And now having fully answered it prays to be hence dismissed and causes it to answer and to be signed and under its corporate seal.

THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE,
By C. C. NELSON, *Recorder.*

LUCKY & YOE.
L. A. GRATZ,
Sol's for Respondent.

Final Decree.

FRIDAY, *August 6th*, 1886.

Court met pursuant to adjournment.
Present and presiding the Hon. W. B. Staley, Chancellor.

No. 3867.

KNOXVILLE WATER CO.
vs.
THE MAYOR & ALDERMAN OF KNOXVILLE.

Be it remembered that on the 4th. day of August 1886,
244 this cause came on to be heard before the Hon. W. B. Staley, Chancellor &c., upon the bill, exhibit, plea in abatement of Def't & exhibits thereto, answer of defendant and the proof in the cause. The complainant read in evidence the following, subject to exception & objections as hereinafter shown.

1. Original Charter of Incorporation, Knoxville Water Co.
2. Deposition of F. M. Lowree, and exhibits thereto.
3. Deposition of E. E. Fuller.
4. Deposition of S. H. Lockett and exhibits thereto.
5. Deposition of A. H. Mastein and Exhibits thereto.
6. Deposition of James Comfort.
7. Deposition of L. A. Gratz.
8. Deposition of L. Tillman.
9. Deposition of Jno. M. Brooks and Exhibits thereto.
10. Deposition of James C. Luttrell.
11. Deposition of Herman Schenck.
12. Deposition of H. Spiro.
13. Deposition of M. Nicholson.
14. Deposition of Geo. E. Downing.
15. Deposition of D. R. P. Demmick.
16. Transcript of record of meeting of City Council of April 6, 1883.
17. Deposition of James H. McMillan.
18. The contract between complainant and defendant sued upon.
19. Stipulation and Charter of Knoxville, Tennessee.
20. Deposition of M. F. Rourke.
21. Deposition of M. J. Condon.

The defendant thereupon read the following evidence:

1. Deposition of John S. Van Gilder & Exhibits thereto.
2. Deposition of James McCaffry.
245 3. Deposition of John McCoy.
4. Deposition of L. E. Craig.
5. Deposition of S. B. Luttrell.
6. Deposition C. C. Nelson and Exhibit thereto.
7. Deposition of S. T. Logan.
8. Deposition of S. G. Heiskell.
9. Deposition of T. A. Hudiburg.

10. Deposition of T. A. Burrier.
11. Deposition of Charles Waring.
12. The original record in this court of Board of Mayor and Alderman of Knoxville *vs.* Knoxville Water Co. No. 3567 on the Rule docket of this Court.

And the Court being of the opinion that complainant is entitled to the relief sought by the bill so far as hydrant rental is concerned is pleased to so decree.

And it further appearing to the Court that the amount due Complainant the Knoxville Water Co. from defendant for hydrant rental under the contract sued upon with interest to this date amounts to the sum of Eight Thousand Seven Hundred and Seventy-five (8,775) and 86/100 Dollars: the Court is pleased to order, adjudge and decree that complainant have and recover of defendant the Mayor & Alderman of the City of Knoxville the sum of Eight Thousand Seven Hundred and seventy five (8,775) and 86/100 Dollars, and all the costs of this cause for which execution is awarded.

And the Court being of opinion that Complainant has no right to recover the taxes paid by it sued for in the bill, is pleased to so decree.

Defendants on trial objected to all proof of Herman Schenck, H. Spiro, M. Nicholson, F. M. Lowree, J. M. Brooks, Jas. McMillan, & A. H. Martine & X Examination of J. S. Van Gilder, C. C. Nelson, as to use of water by fire department of City and pos-ession
246 of keys of hydrants, because not shown to be by proper authority of City Counsel & Defendant objected to all proof of A. H. Martin, E. F. Fuller, Herman Schenck, H. Spiro, F. M. Lowree, James C. Luttrell, John M. Brooks, F. M. Rourke, M. J. Condon, M. Nicholson & James M. McMillan, witnesses for complainant and cross examination of J. S. Van Gilder, S. T. Logan, T. A. Burrier & Charles Waring & C. C. Nelson as to work done or money spent by Water Co. & as to condition of Water works after Aug. 1, 1883, & also particularly as to work or expend-tures, placing & laying pipe & hydrants after June 15, 1885, date of bringing suit, because all such proof was incompetent & irrelevant, and because all work done, money spent &c. after Aug. 1, 1886, & condition of works then was after date at which works were to be completed & was therefore incompetent & irrelevant, & more especially all after suit was begun. Defendant also objected to proof of hand write of Moses Lane by S. H. Lockett & Lewis Tillman because neither qualified themselves to testify as to hand write, and all said proof was read subject to said exceptions & objections.

And from foregoing decree defendant prays an appeal to the next term of Supreme Court to be held at Knoxville on the 2nd. Monday of September next, which appeal is granted upon bond being given as required by law an- one month's time given in which to give said bond.

It appearing to the Court that the same papers are put in record in different ways & at more than one time & that it will be unnecessary to copy same into record for Supreme Court, by consent it is ordered that Clerk & Master will omit from record for Supreme Court such pape-s as Counsel may agree upon & designated in writing

& send such original papers as they may agree upon & designate a copy — such agreement into transcript.

247 STATE OF TENNESSEE, *Knox County:*

I, J. F. Chumbley, Clerk & Master of the Chancery Court at Knoxville, Tennessee, do hereby certify that the above and for-going is a full, true and perfect Transcript of the Original Bill, the plea of Mayor & Alderman Answer of Mayor & Alderman and Final Decree in the cause of the Knoxville Water Co., *vs.* the Board of Mayor & Alderamn, No. 3867 on the Rule Docket of this Court, as the same appears of record and on file in my office.

Said final decree is enrolled in Minute Book Q page 564.

Given under my hand and seal of office, at office in Knoxville, Tennessee, this 8th, day of January, 1904.

[SEAL.] J. F. CHUMBLEY,
Clerk & Master.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company, against, M. & A. of the City of Knoxville, Transcript from Chancery Court of Knox County in case of Knoxville Water Co., *vs.* M. & A. of Knoxville. Filed Jan. 14, 1904. J. T. Carter, Deputy Clerk.

248 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Plaintiff's Exceptions to the First Draft of the Master's Report.

Exceptions taken by the plaintiff to the tentative Report submitted to counsel herein by Henry O. Ewing, Special Master of this Court, to whom this cause was referred by an order entered on the 6th day of October, 1902.

First Exception. For that the Master in his said report finds and holds that the fair invested value of the property and plant of the Knoxville Water Company, the same being shown in the analysis prepared and filed in this cause by William Wheeler and Frank C. Kimball, and in the depositions of said William Wheeler and said Frank C. Kimball "has little weight except as a guide to what is in the plant;" whereas the Master should have found that the fair and reasonable invested value of the plant as shown in the record in this cause, and especially in the depositions and analysis of William Wheeler and Frank C. Kimball is, the "fair value of the plant." by which the reasonableness of the ordinance rates contested

herein is to be tested in this suit: and the Master should have adopted the analysis method or invested value method of ascertai-ing and determining the fair value of the property of the Knoxville Water Company, and should have fixed the fair value thereof on March 31st, 1901, at the
249 amount reached by following said method, and shown in the depositions and analysis of the witnesses William Wheeler and Frank C. Kimball. (C. B. 25-27)

Second Exception. For that the Master finds the total value of the plant and property of plaintiff within and without the City at $608,427.95, and the value of that part of the property which pertains to the City proper, at $570,887.95; whereas, he should have found the fair value of the entire plant to be not less than $1,000,596.00; (C. B. p. 101) and should have found the fair value of that portion of the plant which pertains to the City proper to be .9383 per cent, of this value of the entire plant.

Third Exception. For that the Master has not included in the value of the plant anything for marketing securities of the plaintiff company; whereas he should have allowed for marketing securities 10% of the ascertained value of the plant. (C. B. p. 47.)

Fourth Exception. For that the Master allows for "going concern" only the sum of $60,000.00; whereas the only testimony in the cause fixing the value of "going concern", is that of William Wheeler, who first estimates said value upon the basis of his experience at $106,706.92 (Record p 3196); and then estimates the same upon the basis of its relation to income and sets out his calculations in full upon page 3198 of the record, the value of "going concern" there reached being $133,336.00. These two estimates, each of which exceeds $100,000.00 are the only statements in the record giving figures upon which the Master can base a conclusion, and it follows therefore that the allowance for "going concern," should not in any event be less than the smaller of these two estimates, and should, according to the weight of the testimony, be fixed at the amount of the larger estimate. (C. B. 42. 46: p. 267.)

Fifth Exception. For that the Master allows nothing to the Water Company for "Contractor's profits" or for "contingencies," whereas the Water Company is clearly entitled either to the
250 allowance of 12% for "Contractor's profits" as those words are used in the analysis and deposition of William Wheeler and F. C. Kimball, or to the allowance for conti-gencies made in the deposition of Wingfield. (C. B. pp. 265-266; C. S. B. pp. 1-2.)

Sixth Exception. For that the Master did not include in the value of the property the "sixteen hydrants" erected by the plaintiff in what is known as the old Tenth Ward of the City of Knoxville; whereas the Master should have included said sixteen hydrants in the valuation of the plant as the sum of thirty-six dollars each, the same having been erected by order of defendant. (C. B. p. 210.)

Seventh Exception. For that the Master allows the plaintiff for tools, "teams and stock," only the sum of $9,789.47; whereas he should have allowed for these three items the sum of $12,221.87, as stated by the witness Wingfield. (Depo. Wingfield p. 2918)

The amount allowed on this account by the Master is taken from the deposition of F. C. Kimball, p. 1034, but upon further examination it will be seen, that Mr. Kimball on said page, testifies only to supplies, and it is proper, therefore, to add to his amount the value of the other items, included by Mr. Wingfield under the head of "Tools, Teams and Stock." (Rec. p. 1034)

It is evident that Mr. Wingfield added to Mr. Kimball's statement of supplies on hand, viz: "9,221.87, the sum of $3,000.00, and omitted Mr. Kimball's statement of "Operating Supplies," viz: $567.60. (C. B. p. 253).

This $3,000.00 added by Mr. Wingfield covers such items as teams, office fixtures, &c. not supplies.

Eighth Exception. For that the Master allows for interest on capital during construction only. 0165%; whereas the proof
251 shows that the proper allowance would be from 3% to 4 1/2% (C. B. p. 266).

Ninth Exception. For that the Master makes no allowance to the Water Company for "General Administrative Services" expenses not compensated in salaries, nor charged to operation, and other similar matters;" whereas he should have allowed not less than 5% upon the ascertained value of the property for such services.

Tenth Exception. For that the Master allows nothing to the Water Company for "blind services;" whereas, he should have allowed for such "blind services" the sum of $3,390.00 as shown in the deposition of William Wheeler. (C. B. p-. 253-254; Deposition W. Wheeler, pp. 187, 188, 438.)

Eleventh Exception. For that the Master disallows as Operating Expenses the tax on Consolidation of Knoxville Water Company with Lonsdale Beaumont Water Company, viz: $965.00; whereas the Master should have allowed same as Operating expense of the year when it was paid, or having decided to do so, he should have added said sum to Construction Account.

Twelfth Exception. For that the Master declines to charge all salaries of the Treasurer, Supervising Engineer and Superintendent of Operating Expenses, including such parts of said salaries as are charged on the books of the Water Company to Construction, it being apparent that charging of said salaries otherwise than to Operating expenses, was erroneous on the part of the company. (C. B. p-. 291, 292.)

Thirteenth Exception. For that the Master in said report allows nothing to the Water Company on account of incomplete depreciation or of culminated or completed depreciation; whereas he should have allowed the Water Company for culminated depreciation the sum of $95,987.04 and should have added thereto the accretions on the same amounting to $11,028.64, (Rec. p. 166-H) and for incomplete depreciation the sum of $77,726.51 (Rec. p. 166-H).

All depreciation should be treated, according to the method
252 adopted by the Master, as expense of maintenance whether it be complete or incomplete depreciation, and as it has not been repaid, should be apportioned as expense, *pro rata* among the several years from 1901 to 1913, inclusive, the last being the date

when the Water Company's contract with the City expires. (C. B. p. 79.)

And plaintiff excepts to said Report because the Master has not found that depreciation has not been repaid and requests that he so find.

CHARLES T. CATES, JR.,
R. E. L. MOUNTCASTLE,
JOSHUA W. CALDWELL,
Sol's.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* Mayor & Alderman of the City of Knoxville. Plaintiff's objections to the Master's Tentative Report. Filed Aug. 19, 1904. J. T. Carter, Deputy Clerk.

(1260.) In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

Exceptions by Defendant to the Report of the Special Master.

253 The defendant by its attorney comes and excepts to the report of the Special Master, and for grounds of exception thereto, assigns the following:

I.

The Special Master errs in his conclusion (report p. 38) that "The ordinance rates would not yield a fair income to Complainant." He should have reported to the contrary that these rates not only would, but, as shown by the proof in this cause, did yield and will continue to yield "a fair income" to complainant.

The Special Master's error in this regard arises not so much from erroneous findings of fact, but rather from mistaken conclusions on questions of law, or on questions of mixed law and fact which are reviewed in subsequent exceptions.

II.

The Special Master's erroneous conclusions noticed in the first exception to his report is based upon erroneous findings and conclusions upon the following points or questions which constitute the premises upon which he bases his conclusion.

III.

The Special Master erroneously assumes that as matter of law the rates prescribed by the City must yield a net income annually, sufficient to pay 6% interest, 2% depreciation, making 8% on the value of the plant in addition to taxes in order to rescue them from the catagory of confiscatory rates. Rep. P. 38. Such is not the correct rule on this subject. The rate he describes is the highest that

the plaintiff can, as a matter of right, demand but failure of ordinance to yield the highest rate is not confiscation.
D. L. Br. 16-31; D. F. B. 145-145.

The failure of rates to provide in addition to 6% interest any depreciation does not render them confiscatory.
254 D. L. B. 42-44.

2% is the highest and in this case an excessive rate of depreciation.
D. F. B. 142-143.

So of 6% interest, especially as bonded debt bears 4¼%.

2.

The Special Master errs in fixing the value of the plant upon which the "fair income" of the investors and depreciation are to be computed. His errors in this regard are chiefly as to matters of law, or the result of his erroneous views of the law.

(*a*) The value of the plant as fixed by him at $608,427.95 is as shown by comparison of items, a practical reproduction of Wingfield's estimate of the replacement cost of an entirely new plant on 31st March 1901, the date of the ordinance at the end of the year, whose income and expense are made by him to determine the validity of the ordinance.
Rep. pp. 11-18.

Replacement cost of new plant at end of year though evidence tending to show value is not the true criterion of value, as seems to be assumed by the Master.

The actual plant had undergone large depreciation more then $95,000.00 complete and $77,000.00 incomplete.
D. F. B. 36.

This replacement cost was the highest fixed by any witness and contradicted by not only Nixon and Broah's, but by Ludlow's prices in Chattanooga case, and by the proof of local prices and other facts.

Moreover it includes many items that did not enter into the actual cost of the plant and other items not contributed by the public and still others at excessive estimates of both quantity and price. A few examples will illustrate, to-wit:
255 The Special Master allows for restoring brick pavement in laying pipe $8,202.00, $447.00, $8,649.00 when there was none whatever in construction of the plant.
Rep. pp. 1617, D. F. B. 80-83.

He allows about $39,000,00 for services put in chiefly at the cost of water consumers when the water company claimed less than $9,000.00 on this account and was entitled to less than $2,500.00.
Rep. pp. 1825, D. F. B. 64-66.

He allows about engineering 5% aggregating $23,827.09 ignoring the fact that the City donated the original plant and that except

about $1,856.50 paid during the original construction, the engineering expenses have been paid for the most part as an operating expense and are so allowed by him.

Rep. pp. 18, D. F. B. 52-54.

He allows $60,000.00 for good will or going concern, when no such allowance is proper, but if proper the same has been satisfied by the public.

Rep. pp. 18, 26-7, D. L. B. 44-46, D. F. B. 109-118.

His allowances are based on Wignfield's estimates alone, who acted without knowledge or inquiry as to local prices, etc., and adopted the suggestion of the Water Company's officers made by an unsworn statement, and are excessive in quantity and price or both on divers items as follows, to-wit:

Reservoir, about $10,000.00.
Rep. p. 14.
D. F. B. 48-52.

Standpipes, about $5,000.00.
Rep. p. 14, 15.
D. F. B. 55, 58.

Brick work, about $3,000.00.
Rep. 11-14.
D. F. B. 58-60.

Values and boxes, about $3,000.00.
Rep. pp. 17-18.
D. F. B. 61-2.

Concrete, about $3,500.00.
Rep. pp. 11-13.
256 D. F. B. 63-64.

Pipe, C. I., about $42,000.00.
Rep. pp. 16.
D. F. B. 66-83.

Pipe, W. I., about $85,000.00.
Rep. pp. 16-17.
D. F. B. 66-83.

Pipe laying, about $10,000.00.
Rep. p. 16.
D. F. B. 78-80.

Restoring streets on which pipe laid, about $15,000.00.
Rep. pp. 16-17.
D. F. B. 81-82.

Excavation, about $8,000.00.
Rep. pp. 11, 13, 16, 17.
D. F. B. 83, 86.

Intake tower, over $4,000.00.
Rep. p. 13.
D. F. B. 92-93.

Pumps and boilers, $10,000.00.
Rep. p. 13, Rec. 2703-2716.

Special Master concedes that some of his prices are high and he uniformly follows Mr. Wingfield to the exclusion of others. Mr. Wingfield's estimate in the Chattanooga case was some $400,000.00 above that given by Ludlow, and adopted by the Court in that case. In the matter of excavation at reservoir, he allows 13000 cu. yds. at 40 cts. equals $5,200.00.
Rep. p. 14.

The actual amount of cost was 10,000 cu. yds. at 12½c. equals $1,250.00.
D. F. B. 45, 50, 84.

257 He allows 3600 yds. excavation at River Station, double Nixon and Brown's estimate and over 700 yards more than the Water Company claims.
Rep. p. 11. D. F. B. 84.

His allowance of $2.00 per cu. yd. for rock excavation was nearly double the actual cost.
D. F. B. 85.

As to standpipes, the price of five cents allowed is admitted to be high by the Master. That of about 3½ fixed by Brown and Nixon is the price fixed by Ludlow in the Chattanooga case.
D. F. B. 65-68.

The quan-ity is more reliably fixed by Nixon and Brown.
Rec. 18, 39, 40.

The price of the C. I. pipe at $23.50 per ton is higher than the retail prices at the time. While the thinner pipe was more expensive, it was less valuable. He allows for restoring streets over C. I. pipe 205-377′ ft. (macadam) at 6 cents and 16404 feet (brick) at 50 cents and over W. I. pipe $41293 (macadam) at 6 cts. and 894 (Brick) at 50 cents.
Rep. pp. 16-17.

The Water Company claims no restoration over brick and restoration of macadam over only 150057 at 6 cents.
D. F. B. pp. 80-82.

He allows at $2.00 per cu. yd. for rock excavation in pipe ditches 2871.5 yards for C. I. pipe and 750 for W. I. pipe. This is in excess of the Water Company's claim other items are in like proportion.

b. The fair value of this Company's plant fixed not upon the estimate of replacement cost by a single witness and that estimate the highest made by any witness in the case, but fixed upon the

whole body of the proof, does not exceed $350,000.00 to $400,000.00.

This accords with the taxable value and the estimate of Nixon & Brown and the invested value estimate of Wheeler and Kimball when depreciations and over estimates are eliminated form
258 that estimate.

It accords with Ludlow's estimate and prices in Chattanooga case.

D. F. 28-118.

The defects in the plant are serious and should be considered in fixing the values.

(*c.*) The Master erred in reporting that 9383 per cent. of the plant was used to supply the City proper with water.

Rep. p. 27. D. F. B. 135-140.

This is an immaterial and impracticable inquiry. No separation was made or kept by the Company and none is practicable now.

But the per cent. of income should go at least apace with value of plant inside the City and its expenses should not exceed relative values if this matter is to be deemed material.

D. B. L. B. 35-38. D. F. B. 135-140.

(3) The Special Master errs in his report pp. 8, 27-30 in regard to the income of Complainant's plant that shall be taken as a basis for computation of the "rair income" to the investors.

These errors are chiefly as to matters of law, or of mixed law and fact and are as follows: to-wit:—

(*a*) The Special — erred in assuming and deciding that the reasonableness of the rates prescribed by the City ordinance of March 31st, 1901, is to be determined by applying these rates to the business of the year immediately preceeding that date, to-wit:—from March 31st, 1900 to March 31st, 1901, and that these rates are unreasonable and confiscatory when applied to the business of that year and failed to supply an income sufficient to yield a fair return to the investors.

Reasonableness of said rates is to be determined by the
259 revenue, actual or estimated, that they did yield or would have yielded after the passage of the ordinance from the business then done. Income of former years is pertinent only as tending to show what would be realized after the passage of the ordinance.

D. L. B. pp. 25-6.

The Special Master should have reported the income for the years 1901 and 1902, as same appears on pages 12-1- and 156-158 of D. F. B. to-wit:—Income actually realized under Company's schedule (net) $101,569.98, income estimated under City's ordinance rates at least $89,149.14.

D. F. B. 121, 156-7.

He erred in as-uming that the order of reference did not embrace the year of 1901-2, and in his statement that there was no

exception to taking the year 1900-1 as the crucial year and in excluding proof as to the year 1901-2.

Defendent will insist that the year 1901-2 was submitted for report as to income, that proof was fully heard as to income of that year and that such proof should have been considered and not excluded by the Master and report *and* made as to income of that year in the several aspects indicated in Defendant's brief.

D. F. B. 119, 121, 156, 158.

See also order of reference and brief.

(*b.*) The Special Master erred in his report of the income of this Company's plant in the year 1900-1 in several particulars.

He should have reported income for that year actually realized by the Company under its own rates from all sources at $91,072.84 instead of $88,481.39.

Rep. pp. 27.. D. F. B. 120-1.

He improperly ommitted the item of income derived from taps and supplies and the item of excess of accounts.

D. F. B. 120-1.

He should have reported the probable income for this
260 year under the City's ordinance (if it can be supposed to have operated for a year before it was passed) at $79,004.72 at the very least, subject to increase for divers reasons.

D. F. B. 156-158.

He erroneously puts the reduction of the Company's rate at 22.80 per cent. by the City's ordinance. It could not exceed 20%.

D. F. B. 124-126.

He erroneously refuses to give any weight to the fact that 5 per cent. abatement was given on the Company's rates and no abatement is required by the City ordinance, and refuses to give any weight to the fact that decrease in prices causes increase in consumption.

Rep. pp. 27, 29. D. F. B. 124, 126.

(*c*) He errs in the division of income between City and outside City.

The income assigned by him to outside City is utterly dis-proportionate to and largely in excess of the value of the outside property and of the per cent. of operating expenses that such outside property and business is made to bear. The truth is that such outside business is more expensive than inside business.

Rep. pp. 29, 31. D. F. B. 133, 141.

(4) The Special Master erred in reporting as to operating expenses for the following reasons, to-wit:

(*a*) He erroneously failed to report as to operating expenses as to the year 1901-2. He should have reported the amount for this year at $30279.24.

D. F. B. 127, 135.

(*b*) He erroneously reported the operating expenses for the year 1900-1 at $34,750.90 instead of $30827.89.

Rep. pp. 30-36.
D. F. B. 127, 135.

He in his report discusses many, though not all, the
261 items as to which he over-rules Mr. Nixon's elimination. For reasons shown in his discussion and in the briefs it is clearly that many of these items are improperly allowed in this year as against the water consumers.

Rep. pp. 30-36.
D. L. B. 32-34.
D. F. B. 127, 135.

The question is not one as the Special Master seems to assume, between the Company and its stockholders.

(5.)

The Special Master erred in deciding that 2% was a proper per cent. for depreciation, 1½% is sufficient.

Rep. p. 37.

He likewise erred in holding rates confiscatory that do not yield 2% depreciation in additional to 6% interest and taxes.

D. L. B. 42-44.

III.

The Special Master erred in his rulings on evidence in the following instances and particulars, to-wit:—

(1.) In excluding from consideration evidence showing actual income and actual operating expenses of the plaintiff's plant under its own rates after the date of the ordinance and during a period when it should have been in operation, but for the injunction in this case. This is especially so as to the year 1901-2.

Rep. p. 8.
D. L. B. 23-25.

(2.) He erred in giving undue weight and attaching too great importance to the opinion of experts based on *general experience* who were unfamiliar with local conditions and prices.

262 The evidence of local conditions and prices was in direct conflict with their alleged general experience.

Rep. pp. 4, 10, 18.
D. L. B. 4.

(3.) He erred in failing to compel witness Wm. Wheeler the President of the Plaintiff Company to produce the books of Wheeler & Parks in response to questions on his cross-examination. This witness testified as to estimated construction cost of this Company's plant. Much of this construction from 1891 to 1898 was done by Wheeler & Parks under a contract with the Company rated by Wheeler & Parks as majority stockholders. The books of the Compnay shows only payments on stock or cash. The cost items are on Wheeler & Parks' books. The witness had the books in his possession in Boston

and went to Boston during his cross-examination. He was asked before and after that trip to bring and produce them, but refused and was not required to do so. The defendants claimed their books would show items of quality and cost contradicting Wm. Wheeler's estimate.

Rec. pp. 231-234-258, 407-8, 439-40, 609-10, 727, 1098-99, 1108.

Books are the best evidence of prices and quantities in making estimate of cost of plant.

D. L. B. 14-15.

(4.) He erred in excluding the evidence offered by def't to show that increase in consumption would result from decrease of water rates and the per cent. of such increase, and then holding in his report that there would be no increase basing this conclusion upon his own opinion which we submit is contrary to all decisions and to all scientific principles applicable to the subject.

Rec. 1773-4, 1950-1.

(5.) He erred in excluding from consideration evidence of defects in plant that affects its value. *e. g.* location of intake tower.
263 Rec. p. 20-1.

(6.) He did not give sufficient weight to the fact that Plaintiff with-held its books and all information that the City asked to enable it to fix rates.

Rep. p. 37.

D. T. B. 150-155.

(7.) He erred in looking to facts not in proof—in settling some of the questions in the case.

IV.

The Special Master erred in his finding and statement of minor and detail facts in the following particulars and instances.

(1.) In stating that Brown and Nixon did not contemplate and did not in fact make up a substantial duplicate and reproduction of the plaintiff's plant.

Rep. p. 5.

They both state the reverse: and that the only changes made had the effect to benefit the value of the plant.

C. S. Brown Rec. 2720-1, 2047-8, 2837-39.

W. M. Nixon Rec. 1945.

(2.) In stating that Wingfield's statement of replacement was an exact duplicate, it embraced several things such as brick, paving etc., already edverted to that did not enter into construction of the original plant.

(3) In stating that Nixon's estimate of weight of L. B. Standpipe was based alone on the memorandum book not put in evidence, He made actual measurements.

Rec. 1839-40.

But the book was that of the Company.
Rec. 2884-5.

(4.) In stating that exact facts could not *he* known as to excavation for reservoir. They are in proof from books of the Company and by the contractor who did the work.
Rep. p. 6.
D. F. B. 48-52.

264 (5.) In stating that order of reference contemplated only the year 1900-1 and that the same was not objected to on that accou*m*t.
Rep. p. 8. See order of reference etc.

(6.) In stating that he excluded proof on the taking of evidence for the year 1901-2.
Rep. p. 8.
See rulings of Master.

(7.) In stating there were "former owners" of this plant Complainant has owned it from its inception.
Rep. p. 9.

(8.) In fixing pipes at five cents per pound—admitting that to be high.
Rep. p. 21, about 3½ cents is in accord with the evidence.
D. F. B. 55-58.

(9.) In finding there was in fact a concrete lining in reservoir.
Rep. p. 14, 22. D. F. B. 48-52.

(10.) In finding Wingfield's price of $1,633.00 per filter is reasonable.
Rep. p. 15, 22.

They cost only $1,200.00 each and have been in use several years.
Rec. 811.

(11.) In stating the price of restoring macadam was fixed by Dearing and Rourke at 6 cents per lineal foot.
Rep. p. 23.

Dearing fixes not over 2 and 2½ cents.
Rec. 1668.

And Rourke at same price.
Rec. 1704.

(12.) In fixing the price of pipe above $20.00 per ton.
Rep. pp. 22-23. D. F. B. 66-83.

265 (13.) In finding that 5% is reasonable for engineering.
Rep. p. 26.
D. F. B. 52-54.

V.

The Special Master erred in failing to report fully the facts as to *res adjudicata* and in reporting generally that the reservation in the judgment defeated this plea.

Rep. P. 7.

VI.

The Special Master erred in his report of the liabilities of the Complainant Company if that fact is to be given any effect or significance; in not reporting further the fact that large sums of that indebtedness had been accumulated by unlawful methods, *e. g.* the franchise account of some $35,000.00.

Rep. p. 10-11. D. F. B. 99-110, 24.

And the excessive payments made to Wheeler & Parks on contracts with the Company amounting (the excess) to about $500,000.00 on part of which interest has been paid for several years.

D. F. B. 18-21.

He furthermore erred in refusing to permit full investigation of this indebtedness if it was to have any weight.

VII.

The defendant insists that the fact be stated in the record that it objected to the order of reference as it did, and that the order of reference itself be explained or corrected on this point.

Rep. pp. 1, 8.

Order of Reference requests,—
Respectfully submitted.

J. W. CULTON AND
PICKLE & TUENER,
Att'ys for City.

266 (Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company against Mayor & Alderman of Knoxville. Defendant's Exceptions to Master's report. Filed Aug. 19, 1904. J. T. Carter, Deputy Clerk. Re-filed Sept. 20, 1904, by leave of Court as Exceptions to the Master's Final Report. J. T. Carter, D. C.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
v.
MAYOR & ALDERMAN OF KNOXVILLE.

Master's Report.

To the Honorable the Judges of said Court:

On, to-wit, the 6th day of October, 1902, a decree was entered in the above styled cause referring certain matters and things to me as Special Master. The decree is as follows:

This cause, by consent of parties, and for Special reasons appearing to the Court, is referred to H. O. Ewing, as Special Master, who is ordered to hear all proof offered by plaintiff and defendant, and to report to this Court as follows:

267 1st. The amount invested by plaintiff in its entire plant and property.

2nd. The amount invested in the Corporate limits of the City of Knoxville, including machinery, apparatus, and all appliances and property of every kind used in the operation of the water plant within said corporate limits.

3rd. The amount and character of plaintiff's indebtedness, and the property covered by it on March 30th, 1901.

4th. The value of plaintiff's entire plant and property at the time and of the passage of the ordinance of March 30th, 1901.

5th. The actual value of the plant and property within the corporate limits of the City of Knoxville, including the machinery, apparatus, and all appliances and property of every kind used in the operation in said plant within said corporate limits when the ordinance of March 30th, 1901, was passed.

6th. The gross revenue derived by plaintiff from its entire water plant and property under the rates in effect prior to March 30th, 1901, and how much same would be reduced by said ordinance of March 30th, 1901.

7th. The total revenues derived by plaintiff from water supplied within the corporate limits under rates in effect prior to March 30th, 1901, and how much same would be reduced by said ordinance of March 30th, 1901.

8th. An itemized statement of plaintiff's expenses *per annum*, and what part of same pertains to the property within the corporate limits of the City.

9th. The extent and kind of investigation made by defendant before the passage of the ordinance of March 30th, 1901, the notice given to plaintiff, when and by whom.

10th. What would be a fair amount to allow annual depreciation of the water plant and property of the plaintiff from natural causes,

and by wear and use, and depreciation accrued to March 30th, 1901.

268 11th. Whether or not the rates fixed by defendant's ordinance of March 30th, 1901, are reasonable and would afford or permit a reasonable income on the capital invested in its plant and property by plaintiff.

—. The Master will take proof with all reasonable dispatch and will, if possible, file his report in time for action at the next term of this Court.

13th. The Special Master will report on any other special matter or question about which he is specifically requested to report by either side in writing within ten days after entry of this order; said requests to be filed and made a part of the record. In case an irrelevant or unnecessary inquiry is opened up by such request the costs thereof will be taxed against the party making such request, and the Master will report what, if any, needless costs are thus caused.

At the outset of the taking of this proof complainant offered the "analysis" by witnesses William Wheeler and Kimball this was a statement showing fair construction cost of the plant, with each part thereof given at the time of its construction. The values are estimates by experienced hydraulic engineers.

William Wheeler is President, and Kimball is Superintendent of complainant Company. The values given are proved as fair by witnesses, Hider, Johnston, Wingfield and Ludlow, all hydraulic engineers, making water works construction and operation a profession. The values given in the analysis are disputed by defendant's witness Nixon, Brown, Getaz, Munding, and others, and a wide variance has been found.

Mr. Nixon is a man of considerable practical experience having been Chairman of the Board of Prison Commissioners for the State of Tennessee when the Penitentiary was built, and the Brushy

269 Mountain Mines opened, and as such he directed the building of a water works system sufficient for the Penitentiary and has had considerable experience in and about mines.

Prof. Brown is an instructor of mechanical engineering in Vanderbilt University, and takes outside work as consulting engineer. He was so employed at the building of the Prison at Nashville, and is now so employed by a contracting company building the water works at the new Chickamauga Army Post. He has made plans for water works at Middleton, Ark., and Dickson, Tenn., towns of 2,500 population, but they were not *excepted*. He is not a hydraulic engineer, but is a mechanical and steam engineer.

Getaz is a building contractor at Knoxville.

Munding is a brick building contractor at Knoxville, and Dearing a plumber at Knoxville.

Irwin and Hood are excavation contractors at Knoxville, having been connected with some of the early work on Complainant's plant.

Complainant insists throughout the proof that its witnesses are much better fitted to give expert opinion on prices, while defendant claims its witnesses are practical men, testifying upon actual knowledge, as against the theories of the hydraulic engineers.

The exceedingly wide variance found in these opinions admits of little reconciliation. Giving every witness credit for absolute good faith, the fact remains that in a case of this kind a witness becomes a partisan, so far as it may be in his temper-ment to be so. The Master must rely largely upon the cross-examination of the witnesses and in this test the expert knowledge of complainant's witnesses gives them superiority, not, however, to be exaggerated to the exclusion of any material facts. .

It must be remembered that no two men working apart
270 could reach the same valuation of this plant, and assuming they had approximately agreed, it would be found they had differed materially on many of the items.

The defendant introduced a statement of fair replacement value of the plant as though let to contract on March 31st, 1901, giving cost prices and adding from 5% to 20% for contractors' profit and engineering, the latter being uniformly placed at 3%.

This statement was followed by another, reducing its total on various items, because the existing plant was supposed to have depreciated, and to be out of date. These statements are introduced by witnesses Brown & Nixon. They did not contemplate a duplicate of this plant, but proposed the substitution of other boilers, pumps and filters, with some changes in buildings, claiming the plant proposed would be equally efficient.

Complainant introduces the statement by witnesses Wingfield and Ludlow which gives estimates of cost of building a duplicate of this plant without changes March 31st, 1901. In this statement the prices include contractors' profits. They are based on a supposed fair price to a contractor for doing the work, and to this is added 6% for engineering.

It is settled by the cases reported since this case began, if not previously, that this case will depend upon the value of the plant on March, 31st, 1901, and not upon the cost at time of construction. In this view the analysis of Wheeler and Kimball has little weight, except as a guide to what is in the plant.

The replacement value of Brown and Nixon proposes a different plant, which would cost less and be as desirable the changes applying particularly to machinery, filter plant and building.

271 Unless it be plainly proven that the construction was extravagant, the plant as it stands should be accepted and mere difference of judgment should not operate to cheapen the plant.

Since 1891 complainant has had exceptionally intelligent and experienced managers. They could have had no object in buying high priced filters, pumps, etc., if cheaper ones would have done the same service.

Witnesses Brown and Nixon have not had experience which would justify treating their plans as more advisable than the one adopted by complainant Company. The Nixon & Brown statement has been used, so far as it could be, as a check on the prices of Wingfield and Ludlow.

Defendant accepted to the Wingfield-Ludlow statement as original matter introduced in rebuttal. I over-ruled the exception without

stating reasons at that time. I regard this statement as necessary to a finding on the 4th and 5th. paragraphs of the order of reference, and being directed to hear proof and report would probably have asked for such a statement if it had not been produced, so it is not material whether this proof is "original" or "rebuttal;" the Master needs it to execute the reference.

The quantities given in the Wingfield-Ludlow statement are not contested, except as to weights in L-B stand pipe, amount of excavation for the reservoirs and buildings, and some others hereinafter discussed.

Defendant's brief, page 56, says weight of standpipe by Nixon and Brown was careful measurements and calculations but the reference to proof shows that his calculation was based on a memorandum book not identified or made part of this record. The measurement made by Wingfield (rec. 2931) is more definite and should prevail.

272 The quantity of excavation is disputed both as to reservoir and buildings. The exact facts can never be known as the condition of the ground at commencement of work is unknown. (C. B. 146; D. F. B. 83).

Wingfield and Ludlow made these measurements with the knowledge that they were controverted. Surely on measurements these witnesses, with their experience and qualifications, must be accepted as the best proof. On prices which are generally indefinite engineers, as other men, may be influenced by their sympathies, but measurements come from exact facts.

At the pumping station they had to estimate the original surfaces, but their experiences should best fit them to do this.

There has been much doubt in my mind as to whether the value of this plant should be stated at cost to a contractor, or at what a contractor would charge; the former method in all the statements contemplates as percentage for contractors' profits and what this percentage should be is much controverted. In my opinion no figure can be fixed for it. Contractors always get all they can, their bids being influenced by competition and the amount of work they have in view. I have finally concluded that stating a fair contractor's price would be more intelligible. Wingfield has done this, but has added a percentage for "contingencies." If the work is let to contract, as for example a house is built, and a contract made with a responsible contractor for a duplicate, there is nothing left for contingencies or extras, so this 10% added by Wingfield is held not to be an element of value.

I shall endeavor to set before the Court my view of the law effecting this case and controlling my action, without attempting to con-

273 strue and differentiate the many cases cited by counsel, and it is the main duty of the Master to find the facts and leave the law for the Court, as far as possible.

The effect of the decision of the suit in the Chancer- Court of Knox County, which reached the Supreme Court of the United States, is not specifically referred to me. I think, however, the reser-

vations in that decision are sufficient to prevent it from affecting the issues here.

Complainant has furnished me with brief and supplemental brief. Defendant has furnished brief on facts and on law. These briefs are prepared with great minuteness, and I may say ability, and have been of very great assistance in the examination of this enormous record.

In this report I have referred to pages in these briefs almost to the exclusion of direct references to the record, believing this will be more convenient to the Court. For brevity the briefs will be described as follows:

Complainant's brief will be described as "C. B."

Complainant's suppl. brief will be described as "C. S. B."

Defendant's brief on facts will be described as "D. F. B."

Defendant's brief on Law will be described as "D. L. B."

The ordinance was passed March 30th, 1901, and the business year of complainant ends March 31st, 1901. The bill was filed Dec. 7th, 1901. It appears that when the bill was filed no complete year of business had elapsed after March 30th, 1901. The order of reference clearly contemplated the year ending March 31st, 1901, not subsequent periods, and was not objected to on that account. I did not, and do not think I should have admitted proof on any period after March 31st, 1901. I so held, and defendant thereupon petitioned the Court as to this ruling of the Master. I was not present, but was informed that on said petition the Hon. C. D. Clark said (not written) that he would not instruct the Master, but intimated a different view from that of the Master and I thereupon admitted proof of a subsequent period, and much of it is in the record. It seemed to be a misunderstanding as to the view of the Court, though in the best of good faith. Upon learning this I thereafter excluded proof as to later periods and have not considered it in this report. I am quite of the opinion that an ordinance is supposed to fix rates upon facts then existing. "The only fair judicial test is to apply the rates to the business that has been done in the past." (35 F. R. 881.)

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In answer to the 1st, and 2nd, paragraphs of the order of reference, the fair investment value" of William Wheeler, a part of which is his very elaborate analysis of the plant past and present, is presumably intended to be responsive to these. The manner in which this is presented shows great ability, care and thought.

Complainant's counsel have devoted much of their able brief to this subject. Still I can see no aspect of this case in which it is material. In some views the theory would seem to be exact justice, but to hold to it would make a precedent whereby the regulation of rates would become impossible.

Suppose this complainant had in the past done a business so profitable as to more than pay for the cost of this plant and interest, could defendant insist that the business he now operated with no income beyond expenses? The past fortune or misfortune of the Company cannot control. A lump sum for being a going concern with a large

business is all that could ever be allowed for the risks covering the experimental, or infant stage.

Neither can the culminated depreciation of the plant be treated as something upon which income should now be paid. If not paid for during its own period by earnings above expenses, and fair income, it is a loss of that time not to be carried forward to another generation.

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The question is, what is "the amount invested by complainant in its entire plant and property," and this can never be answered except as a guess, for no books in existence show it.

For the first eight years of complainant's existence the books are very unsatisfactory and unintelligible as to actual investment. This was in the hands of former owners. The present owners made extensive additions, which were paid for by an issue of preferred stock, and this comes far from throwing light on the amount invested.

There was consolidation with Lonsdale Company, and its books were destroyed in a fire. I do not believe it is anywhere attempted to be shown the whole amount of capital actually put into this plant, except William Wheeler has shown in his analysis when each part of the work was done, beginning in 1882, and fixing a value as of that time, the values being fixed by his expert knowledge. This has been agreed to by various expert witnesses as reasonable.

Defendant has met this in part by testimony of men who did the work, and it is common knowledge that in 1882, when Knoxville was a much smaller City, labor was far cheaper, yet these prices are generally higher than the Wingfield prices of the year 1901.

The witnesses are men of high character, and are in good faith, but they simply cannot give this information with that degree of certainty which would justify it being the judgment of the Court.

The opinion of an expert with sufficient exact facts before him is quite different. Such of the elements of value claimed by William Wheeler as outside of the physical plant, as I think, are applicable, will be treated hereinafter. It seems to me sufficient to say that the invested value would be greater than the value March 31st, 1901, and if the case is with complainant on the latter it is idle for me to find and report the details on the former.

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In answer to the 3rd. paragraph of said order of reference, I find and report:—

The indebtedness of complainant on March 30th, 1901 was:

First mortgage bonds	$150,000.00
Debenture certificates	85,000.00
Notes payable	251,500.00
Accounts payable	44.74
Elbert Wheeler, Treasurer	43,000.00
	$529,544.74

Complainant has stated as indebtedness also:—

Capital stock perferred	$295,000.00
Capital stock common	645,000.00
	$1,469,544.74
Depreciation fund re-invested in plant	19,344.00
	$1,488,888.74

I do not think that either stock or depreciation fund is strictly "indebtedness," but do not consider the distinction material to any issue in this case. (714 rec.)

In answer to the 4th, paragraph of the order of reference, I find and report the value of the plaintiff's entire plant and property on March 31st, 1901, to be as follows:

River Station.

Earth excavation around station 1954 cu. yds. @ 20¢.			$390.80
Earth excavation in old engine pit 750 cu. yds. @ 30.			225.00
Earth excavation in new engine pit 833 cu. yds. @ 30.			249.90
Earth excavation in coal chute 50 cu. yds. @ 25¢			12.50
Earth excavation in screen well 13 cu. yds. @ 35¢			3.90
Rock excavation around station 1293 cu. yds. @ 80¢			1036.80
Rock excavation old engine pit 680 cu. yds. @ $1.50			1020.00
Rock excavation in boiler house 114 cu. yds. @ $1.00.			114.00
Rock excavation in new engine pit 370 cu. yds. @ $1.50			555.00
277 Rock excavation in coal chute 62 cu. yds. @ $1.00			62.00
Rock excavation in tunnel between wells 55 cu. yds. @ $3.00			165.00
Rock excavation screen well 31 cu. yds. @ $3.00			93.00
Concrete in pumping station 722 cu. yds. @ $6.50			4,693.00
Concrete floors in pumping station 402 sq. yds. @ $1.20			482.40
Brick floors in coal house 80 sq. yds. @ 1.00			80.00
Brick work laid in cement:			.00
In Rosendale, old engine pit	70,520 @	$15.00	1,147.80
In Portland, new engine pit	57,440 @	17.00	976.48
In Rosendale, old station	16,320 @	14.00	228.48
In Portland, new station works	16,200 @	17.00	275.40
In Portland new station	28,800 @	17.00	489.60
In Portland new station work shop.	16,200 @	17.00	275.40
In Portland, new station office	11,400 @	17.00	193.80
In Portland retaining wall around new pump pit	79,200 @	17.00	1,346.40
In Rosedale retaining wall E. W. of Station	57,900 @	14.00	810.60
In Portland screen well	20,800 @	17.00	355.60

In Rosendale in boiler room	37,065 @	14.00	518.91
In Rosendale in coal chute	24,000 @	15.00	360.00
In Rosendale in coal scales	18,000 @	14.00	252.00
In Portland in tunnel	10,400 @	20.00	208.00
In Rosendale in tool house rear wall	14,400 @	14.00	201.60
Brick work laid in lime mortar in old engine room	38,080		
In new engine room circle	23,120		
In new engine room office	19,440		
In new engine room workshop	19,440		
In boiler room	47,580		
In tool houses front and ends	10,180		
In laboratory	16,650		
	174,490 at	$12.00	2093.88
Deduct ½ area of openings	10,450 "	12.00	125.40
			$1968.48
278 Vitrified Brick 52,500 @ $7.00 additional cost			367.50
Enamel Brick 11,500 @ 111.00 " "			1276.50
For floors and roof, all wood			1724.00
			21882.45
Hardware and nails			340.00
Painting and oiling			212.50
Slate roofing			654.00
Guttering and flashing			165.00
Doors, windows and frames			426.50
Windows and door sills			207.00
Stairs and railing			695.00
Railing around pit			195.80
Labatory $200.00 less $85.00			115.00
Plumbing, heating and lighting			300.00
Felt roofing of tool house			17.50
Macadam			35.00
Sodding			65.00
Fencing Craig Street lots			175.00
Drainage Front Street, stairs, etc			134.00
Intake tower and suction connection			10723.25
Screen well equipment			650.00
Pumps and connection			29515.10
Boilers and connections			9752.50

Filter House and High Service Pumping Station.

Excavation for filter house, 1129 cu. yds. @ 20	225.80
Excavation for setting basin 277 cu. yds. @ 20	55.40
Grading around station 2000 cu. yds. @ 18	360.00
Concrete in settling basin walls 105 cu. yds. @ 8.50	892.50
Plastering settling wall basin 231 sq. yds. @ 1.00	231.00
Cement floors 849 sq. yds. @ 1.20	1,018.80

Brick laid in Cement Portland 138,000 @ 17.00....	2,346.00
Brick laid in lime 180,000 at 12.00.....	2,160.00
	83,550.10
279 Extra for vetrified brick 187,000 at $7.00.....	$1,309.00
Lumber and wood floors	1,169.70
Carpenter work	890.00
Hardware, nails and iron	300.00
Painting and oiling	383.00
Flashing and guttering	250.00
Slate roofing	855.00
Doors and windows	295.50
Door and window sills	147.00
Stairs and steps	110.00
Heating and lighting	165.00
Fire protection	200.00
Drainage and settling basin connections.....	1,498.80
Sodding	145.80
Macadam walks and drives.....	92.00
Fencing	280.00
Londsale Stand-pipe.	
Estimated 120,000 lbs. at 5¢ erected.....	$6,000.00
Foundation, 180 cu. yds. at $5.00.....	900.00
Excavation 90 cu. yds. at 20 cts.....	18.00
Storage Reservoirs.	
Excavation and embankment, 13,000 at 40 cts.....	$5,200.00
Concrete and brick lining, 47,196 sq. ft. at 22 cts....	10,383.12
Puddling sides and bottom, 47,196 sq. ft. at 4 cts....	1,887.84
Preparing hillside for embankment.....	1,000.00
Wire fencing	105.00
Fencing around lot	250.00
Contingent allowance for bad bottom.....	2,000.00
Grading and sodding bank	200.00
280 Chimney Stack.	
Brick work 52,600 at $20.00.....	$1,052.00
Vitrified brick 15,000 at 7.00 extra.....	105.00
Trimming brick 3,200 at $20.00.....	64.00
Concrete foundation 17 yds. at $5.00.....	85.00
Excavation for foundation 17 yds. at 20 cts.....	3.40
Lead cap plate	34.00
Lightning rod equipment	50.00
Cleaning door and frame	5.00
Stand-pipe on Reservoir Hill.	
210,000 pounds at 5¢.....	$10,500.00
Foundation 139 cu. yds. at $5.00.....	695.00
Excavation 45 cu. yds. at 20 cts.....	9.00
Connections to pipe lines.....	60.00

Filter Plant.

Furnishing and installing eighteen 10½ Warren Filters	$30,000.00

Capacity 5,000,000 gallons.

Pumping Engine at Filter Station.

Compound duplex 2,000,000 pump	$3,000.00
Foundations and connections	624.15

Boilers at High Service Station.

Manning upright boiler and connections	$1,140.00
Return tubular boiler and connections	1,025.00

Pipe Distribution System.

	6126 Tons cast iron pipe 3″ to 20″ diameter @ $23.50	$143,961.00
	Specials 4% amount of pipe	5,758.44
	Laying 20″ pipe 3723 feet at 60 cents	1,633.80
	Laying 18″ pipe 715 feet at 50 cents	357.50
	Laying 16″ pipe 9,031 feet at 40 cents	3,612.40
	Laying 14″ pipe 7,608 feet at 30¢	2,282.40
	Laying 12″ pipe 34,383 feet @ 25¢	8,595.75
	Laying 10″ pipe 23,680 feet at 20¢	4,736.00
281	Laying 8″ pipe 37,214 feet at 15¢	5,582.10
	Laying 6″ pipe 104,821 feet at 13¢	13,626.73
	Laying 4″ pipe 46,109 feet at 10¢	4,610.90
	Laying 3″ pipe 20,864 feet at 10¢	2,086.40
	Restoring street surfaces 205,377′ macadam @ 6¢	12,322.62
	Restoring street surfaces 16,404′ brick @ 50¢	8,202.00
	Rock excavation 2871.5 cu. yds. @ $2.00	5,743.00

Wrought Iron Pipe.

3½ Inch 251 feet at 43 cts. laid	$107.93
3 Inch 490 feet at 37¢	181.30
2½ Inch 416 feet at 30¢	124.80
2-Inch 33,923 feet at 22¢	7,463.06
1½ Inch 5,668 feet at 19¢	1,076.92
1¼ Inch 5,557 feet at 16¢	889.12
1 Inch 18,152 feet @ 14 cts	2,541.28
¾ Inch 9,036 feet at 12¢	1,084.32
½ Inch 1,517 feet at 10¢	151.70
Restoring street surfaces 41,293 ft. @ 6¢, macadam	2,477.58
Restoring street surfaces 894 ft. @ 50¢ Brick	447.00
Rock excavation 750 cu. yds. at $2.00	1,500.00
Pipe bridges in Clinch Avenue and elsewhere	1,000.00

Hydrants and Valves.

250 hydrants set and conected at $30.00	$7,500.00
20 Inch gates and boxes 9 at $125.00	1,125.00
18 Inch gates and boxes 1 at $100	100.00
16 Inch gates and boxes 16 at $75.00	1,200.00
14 Inch gates and boxes, 14 at $60.00	840.00
12 Inch gates and boxes 31, at $41.00	1,271.00
10 Inch gates and boxes 28 at $33.00	924.00
8 Inch gates and boxes, 63 at $23.00	1,449.00
6 Inch gates and boxes, 185 at 15.00	2,775.00
282 4 Inch gates and boxes 85 at $11.00	935.00
3 Inch gates and boxes 83 at $9.00	747.00
2½ Inch stock cock and box 1 at $8.00	8.00
2 Inch stop cock and box 60 at $6.50	390.00
1½ Inch stop cock and box 10 at $5.50	55.00
1¼ Inch stop cock and box 15 at $4.75	71.25
1 inch stop cock and box, 36 at $4.25	153.00
¾ Inch stop cock and box, 24 at $4.00	96.00
½ Inch stop cock and box 3 at $3.55	10.65
16 Inch check valve, 1 at 185.00	185.00
10 Inch check valve, 1 at $60.00	60.00
1½ Inch Automatic air valve, 3 at $15.00	45.00
Brick chambers with iron cover, 5 at $20.00	100.00

Service Connections and Meters.

3910 Service pipes in macadam and dirt streets @ 8	$31,280.00
413 Service pipes in brick streets at $18.00	7,434.00
275 Meters at 18.25	5,018.75
275 Meter boxes at $8.00	2,200.00
Restoring cement sid-walks, 85, at $3.00	255.00
Total	$476,419.31
Engineering 5% on construction	23,820.97
Interest during construction 1.165% on construction Real Estate and organization $508,841.31	5,928.00
Add 2 hydraulic jacks charged to expense	48.20
Tools, teams and stock	9,789.47
Real Estate	22,422.00
Organization, promotion etc	10,000.00
Going concern	60,000.00
	608,427.95

The matter of earth excavation (C. B. 161, D. F. B. 84) the Brown and Nixon statement, allows 20% for earth excavation the same as the Wingfield-Ludlow statement. For earth excava-
283 tion in engine pits, coal chute and screen well the Nixon & Brown statement retains the same price of 20%. Wingfield allows 25 cents for coal chute, and 30 cents for the pit and screen well. The Wingfield estimate of all this excavation is abundantly

sustained by the proof, and is really low as to that in the pits, coal chute and well.

Rock excavation (C. B. 150 D. B. 84), Brown and Nixon have various prices for rock excavation, ranging from 60 cents to $1,50 and I find their figures at variance with the weight of the testimony, in fact they are very much too low. The Wingfield-Ludlow figures appear reasonable in all respects, unless it be the two latter items at $3.00 a cubic yard, but the number of yards is so small that it is not material, and even that is reasonable from what is before me about the nature of the work.

The Concrete in Pumping station is treated as being Portland cement. It is stated so to be and not effectively contradicted. The one thing I find correcponding to this in the Brown-Nixon statement is 1,116 cubic yards at something like 3.65. This contemplates some other construction, and is not comparative. I conclude from the record (C. B. 183, D. B. 63) that this price is reasonable.

The next item of concrete floors Wingfield puts at $1.44 per square yard; Brown at 75 cents, and $1.20 is thought by me to be a fair price.

The next item of 80 square yards of brick floor I put at $1.00, instead of $1.20 estimated by Wingfield. The Brown statement did not have this floor, and I do not find much about it, but I feel sure the price I have given is sufficient.

Prices on brick work laid in cement given by Wingfield are on a whole about correct. There is much contention in this
284 record about the method of calculating brick in a wall, there being two methods; one known here as the engineer's method and the other the contractor's method, but the difference is fully explained and causes no confusion in this case. The Wingfield statement and the Brown statement have figured brick by the same method. The cost of brick work is fully treated. (C. B. 118, D. B. 58). I do not believe a fairer aggregate could be reached for the *the* above brick than the one stated as an original proposition, though I might increase some of the items and diminish some of the others to a slight extent.

Common brick laid in lime mortar are put by Wingfield at $12.00 and by Brown at $10.00, but I have retained the $12.00 valuation. I am inclined to think this high, but remembering that Brown adds 12% to this $10.00 for contractor's profits, while the above is intended to include contractor's profits, and also that Brown figures brick at $6.00, when they were $6.50, would reach the aggregate of $11.70, which is the closest these witnesses have ever gotten together. I therefore adopt the $12.00 price.

The items in the 16 line beginning at "For floors and roof, all wood," are none of them large in themselves. The difference in them would not materially affect this suit. The Brown-Nixon statement makes various reductions thereon, but they may not contemplate exactly the same construction.

The intake tower and the suction connection (C. B. 136, D. F. 92); attention is called to the fact that this actual cost was $8,855.33, to which must be added such connection estimated by Wheeler at

$2,185.75, and to the $8,855.33 would be added the contractor's profit. The replacement statement of Nixon and Brown places it at $5,714.57. The discrepancy is certainly remarkable on a structure of this character, but complainant's proof on this subject seems to be indisputable. The intake tower was constructed during the
285 year ending March 31st, 1901. I might in justice to Messrs. Brown and Nixon, add, however, that they figure on a cheaper mixture than the one existing, and assumed it to be sufficient. This would account for a part of the difference. In connection with this intake tower, defendant claims it is of no value, (D. F. B. 92) because it is below the mouth of White's Spring Branch which empties into the river some two hundred yards above. Drs. Deadrick and Miller testify that this branch comes out of a hollow some three-quarters — long, inhabited by the poorer class of people, who have no sewerage, and that when a hard rain comes all refuse goes into the river immediately above the intake tower. No analysis of the water is shown, and complainant relies upon the fact that its franchise compelled it to build its pumping station at that point, which is undoubtedly true.

If good cause exists why the water should not be taken in here, the City has its remedy by proper legal steps. Until this is done I certainly think the intake tower should be given its full valuation. It is there serving its purpose, and may be for many years yet.

The matter of pumps and connections (C. B. 103, D F. B 87). A very large item seems to have been lumped by Wingfield and Ludlow. Brown and Nixon substitute other and cheaper pumps which they say will do the work. The price for these pumps and connections, and also the boilers (C. B. 111) fixed by Wingfield seems to be borne out by the proof.

Under the head of "Filter House and High Service Pumping Station," about every item has been heretofore treated in some other part of the plant, and the prices fixed by Wingfield seems to be fair, except cement floors reduced to $1.20.

Lonsdale Standpipe, with its foundation and excavation is
286 valued as stated by Wingfield. Brown and Nixon insist with great vehemence that the price is very high. (C. B. 240, D. F. B. 55). Brown and Nixon fix its value at $0.0344 per pound, which, with contractor's price added, would amount to $0.0385 per pound, while Wingfield put it at $0.05 per pound. I have some reason to think five cents is rather a high price, but defendant shows no authority for its price. Wingfield claims to have had quotations as of this date, and his evidence seems to be more definate. It is a rather wide discrepancy for the character of the commodity.

The first item in "storage reservoirs" is for excavation and embankment (C. B. 166, D. F. B. 48.) I am inclined to believe that the 40 cents of Wingfield is a low price, although Brown and Nixon have placed it at 15 cents.

The next item for concrete and brick lining is quoted by the square foot at 30 cents being 8 inches thick. Brown and Nixon propose to have this all concrete, which is not comparative, but I am inclined to believe that Wingfield's price is to- high, and have fixed

22 cents per sq. foot, which will reduce the Wingfield estimate some $3,700.00.

The other items above are accepted as given in the Wingfield estimate including $2,000.00 for bad bottom. I do not allow the contingency estimate of 10% proposed by Wingfield, because I consider it being a completed plant all the contingents have happened and are known, and this being one of them should be allowed as an element of value.

Filter Plant, (C. B. 231,) the Wingfield valuations are approved. Defendant proposes to substitute other and cheaper filters, and in this way reduce this estimate. Proof does not show such substitution advisable. The prices given by Wingfield seem proved by this record.

287 Pumping engine at filter station, the Wingfield prices seem less than Brown's replacements statement.

Boilers at High Service Station (C. B. 115,) defendants contests this value with a substitution and also Mr. Nixon's opinion that it is not a desirable make of boiler. No real contradiction of the Wingfield estimate given.

Cast iron pipe, (C. B. 175, D. F. B. 67), I have taken pages and volumes of proof on this price of pipe. Wingfield give- $24.00 per ton adding 10% for continge-cies and 6% for engineering. Brown $18.50, with 5% for contractor's profit, and 3% for engineering. Omitting engineering (to be treated hereafter on the whole plant) Wingfield would reach $26.40 and Brown $19.425. The proof shows me abundantly that the price of cast iron pipe is very vague at all times. In fact I know of my own knowledge that on the same day a foundry may be asking one price in one City and a much higher one in another, out of all proportion to any difference in freight. The common rule of the trade seems to be that in Cities where a foundry is located, competition is lacking, it being assumed a local plant having such an advantage in freight will get the business. I have heard it said that Pittsburg could always buy pipe from Chattanooga foundry f. o. b. Pittsburg cheaper than Chattanooga could buy it. No price can be fixed which cannot be attached by proof in this record.

It is to be considered that at the particular time this ordinance was passed pipe was much lower than it had been, and shortly thereafter took a great rise. Complainant had contracted for its pipe for this year at $22.60 f. o. b, Knoxville, and was paying that price March 30th, 1901. In laying pipe there is said to be considerable loss from cutting off at street intersections. Complainant used a thinner pipe than was usual, and for this reason could not buy as

288 cheap per ton as others then a contractor's profit might be considered. I believe $23.50 per ton a fair price to fix.

For laying cast iron pipe, (C. B. 185, D. F. B. 78); after reading everything said on this subject, being convinced that complainant's witnesses are to- high, and that defendant's witnesses are to- low, I have fixed the prices. Restoring street surfaces (C. B. 173, D. F. B. 81), Wingfield and Ludlow put his at 10 cents per running foot; Brown and Nixon at one cent, and Wheeler and Kimball at 6

cents. Such differences as this are really absurd. On the testimony of Dearing and Rourke I fix this at 6 cents, as I must assume the work to be done according to law, but I believe that to be a full price.

Restoring brick surface (C. B. 200, D. F. B. 81) Defendant says pipe was laid before brick paying was constructed, and practically all of it was, but it is a proper charge on a replacement estimate. The price of 50 cents per foot may be high, but weight of the proof is to fix this price.

Wrought iron pipe, (C. B. 189, D. F. B. 76); this is a very much contested question, full of variations. what I said about cast iron pipe and laying same will apply here largely although wrought iron pipe has a market price. I have fixed the prices believing them fair to both sides.

Hydrants and valves, (C. B. 204 D. F. B. 61-86); I have reduced the number of hydrants by *the* 16 in old tenth ward. The history of these 16 hydrants appears fully in the record and need not be inserted. It seems a hardship on Complainant it having erected these hydrants under defendant's directions and collected rental therefrom but the question is settled that defendant did not have to pay rental; that the territor*t* is without the City and I think this Court could not allow these hydrants as in the plant. Three hydrants in West Knoxville are denied by defendant. It seems that they do not exactly exist.

289 The Corporation of West Knoxville contracted with L. B. Water Company which is now consolidated with complainant. West Knoxville was consolidated with defendant, and by the acts its existing contracts were valid. Its contract called for a minimum number of hydrants to be erected by complainant, at places indicated by the municipality. The rent for the minimum number has been and still is being paid. Complainant awaits defendant's pleasure to erect the other three, and must do so at any time defendant decides where to put them. I believe this obligation on Complainant is equivalent to having them built, for the purpose of this case.

The words "Gates," "valves," and "stop cocks," are used herein as meaning the same thing, and the evidence indicates the Wingfield estimate as being reasonable. (C. B. 210; D'F'B. 61.)

I have not changed the Wingfield estimate on service connections and meters.

Meters (C. B. 224; D. B. 62); The Wingfield prices for meters and boxes seems established. Complainant's proof is of a superior nature to that of defendant.

In the matter of services (C. B. 218; D. F. B. 65), there is much difficulty, not as to price, for the proof seems to be with complainant. Defendant's plumber witness when under cross-examination rather confirms it. Defendant says, and proof shows, that consumers were made to pay for all but 423 of the 4,323 services stated. The Complainant charged up to 1895 each new consumer $8.00 for these services after that $5.00, except 423 were put in by complainant without charge to consumer. Complainant says it actually owns these con-

nections and renews them without charge. They are in the street and cannot be claimed by consumer in case of competition this consumer would not be permitted to connect this with another main; that the Company is liable for any defects or injuries and its
290 control over the pipe in the street has never been questioned. The contention is that no matter how obtained, the property is theirs and the charge heretofore made was an additional charge for water at that time.

I see no way of resisting this conclusion, although I confess to much sympathy with defendant's contention that the citizens having paid for it should not be charged an interest on its value. The matter of $10.00 additional for each service under brick is denied by defendant because not incurred, there being no brick streets when pipe was laid.

The greater expense of doing the work now should inure to the value of the plant. If invention has made some part of this construction much cheaper now than when done defendant would have the benefit of that.

Engineering (C. B. 265, D. F. B. 52); Wingfield al-ows 6%; Brown and Nixon 3%, no doubt engineers could be procured to do this work for 3%, or less, but there would be the risk of costly mistakes, to say nothing of fraudulent trades with contractors. An engineer of standing should be employed and 5% would be a fair allowance.

The per centage fixed by Nixon & Brown for loss of interest during construction amounts to .0165 on the whole plant. Complainant claims 3%. I think with business men in charge the percentage of .0165 is ample.

Brown and Nixon have allowed $10,000.00 as organization expenses, which seems to me to be ample. Tools, supplies, stock etc., put by Wingfield at $12,221.87 seems to be in excess of Kimball, (rec. 1033). Kimball should best know about this. Perhaps I have overlooked some evidence in connection with it.

"Going concern," (C. S. B. 24; D. L. B. 45) is an element of value it is so by the cases and by reasoning on the everyday affairs of life.

Using large quantities of water or light is an acquired habit; bath room, water closet, hydrants, elevators, sprinkle law-s, factory away from water courses, are all the effect of time. A whole
291 population does not change its habits in a year, or five years. Notwithstanding complainant is a practical monopoly, it has built up a trade not as against other sellers, but by creating a demand. It would have an immense advantage over any competition, by reason of its service connections. It has taken the risks and proved that the water can be supplied at a profit. As to the manner of estimating this, I cannot agree that percentage on value is a correct basis. I do not see the relation. A business might have $50,000.00 invested and be worth $100,000.00, on account of a large business acquired: in other words 100%. I have fixed a sum which seems reasonable to me. With all that can be said it must be done arbitrarily.

In answer to the 5th paragraph of the order of reference, I find and report that .9383% of the entire plant of Complainant was in use in supplying the City proper, being in amount $570,887.95.

In answer to the 6th paragraph of said order of reference I find and report:

The gross revenue derived by complainant from its entire plant and property under the rates in effect prior to March 30th, 1901, was $88,481.39. Under the ordinance of March 30th, 1901, this income would have been $70,857.75.

Complainant claims this to be $88,481.39, and Mr. Nixon, witness for defendant, increases this amount by first $208.79, which represents the increased of uncollected accounts over that at the same date March 30th, 1901.

Complainant's business year ends March 31st, and water rent during that month not being collected until April goes into the business of following year, and the actual consumption of March 1900 goes into the year from March 31st, 1900, to March 31st, 1901.

292 The youngest of the uncollected accounts was a month old, and all of this increase from 1 to 12 months old. The power to cut off water is a very efficient collector. Water accounts are paid very promptly, so the average of these accounts must have been very low, so far as prospects of collection went; certainly not $208.79. No doubt they were worth something, but proof affords me no guide so it will be excluded from the income. (C. B. 275; D. F. B. 121.)

Second, Mr. Nixon increases the income of the Complainant by $878.45, the charges for "taps." This is an expense to which complainant is put, and for which it charges consumers. Certainly unless a substantial profit on the tran-action be shown it should not go to income. (C. B. 277; D. L. B. 31. D. F. B. 121.)

Third, Mr. Nixon increases income by an item called "supplies," which is a book transaction of complainant, whereby it charges construction or repairs out of a stock of supplies kept on hand. I may not understand this question, but cannot see under what aspect defendant claims this to be "income." (C. B. 277; D. F. B. 121; D. L. B. 31.)

This treats all of the difference as to income from the whole plant.

Coming to the reduction in income consequence upon the ordinance, the first issue is the per cent. claimed by complainant to be 22.88%, and by defendant 18%. The method adopted by complainant for this result is an actual demonstration; that by defendant more or less of an estimate. Complainant's demonstration method was before witness Nixon, and if erroneous he should have shown wherein.

Defendant contends that reduction in price will so increase consumption as to cause no diminution in income. This may be true; the world has been frequently astonished by such results, but evidently complainant represented by parties of great ex-

293 perience thinks otherwise; or the rates would be reduced without this expensive litigation.

In the matter of water consumption, small consumers and the

poorer people do not often use as much as their minimum rate would allow, and with large consumers and wealthier people it is not reasonable that a 22% reduction would cause them to use any more water. They will use all they require at the higher rate.

A reduction in railroad rates is not comparable to a reduction in water rates, in this respect; the former may gain business from competing lines, cause people to travel, or enable shippers to reach more distant markets, and still leave them a profit.

Defendant has claimed that 5% discount for prompt payment is not required under the ordinance. This makes up the greater part of what is called "abatement." The business is by nature a credit business, and with many persons not financially responsible. Such a discount is common to most, if not all gas and water companies. They have not done this from generosity. It must be that it "pays" to allow the discount, and I cannot agree that this does not of necessity apply under the reduced rates. (D. F. B. 125; C. B. 317.)

In answer to the 7th paragraph of said order of reference, I find and report that the total revenue derived by complainant from water supplied within the corporate limits under rates in effect prior to March 30th, 1901, for business year ending on that date was $78,148.31, and under said ordinance the reduction would leave income inside City at reduced rates, of $63,342.40, there being no reduction on hydrant rentals of $11,455.00.

Under the preceeding paragraph of the order of reference I have discussed all contentions as to these amounts except that defendant denies complainant's right to separate its income as between
294 City and suburbs. (D. F. B. 132.)

Separation of income and expense between City and suburbs was approved in the Chattanooga case, and that case is cited with approval in defendant's brief. At Chattanooga the suburbs are distant, and some above the City, particularly Lookout Mountain, where a pumping plant is required on the side of the Mountain. This constitutes expensive service, and 20% of the operating expense is charged to the suburbs, while only 15% of the income as-igned to the suburbs. At Knoxville the suburbs are near, and not higher, and to supply them is but a small increase over what would be the expense without them. If the rule established in the Chattanooga case be correct, it is to be followed when it operates in favor of the Water Company. There is no tangible, definite evidence in the record denying the percentages stated by complainant. The income from suburbs was taken by actual account of each consumer on the books and being on the same book, or books, does not render this at all difficult. What has been said here applies only in part to the discussion of division of operating expense between City and suburb, but it is well to finish the subject of these divisions.

Complainant has stated 5.4% of the operating expense as applicable to the suburbs. At page 708 of the record is the statement showing the plan of this division; that in such items as coal and alum the same percentage is used as the income, but on such items as salaries and insurance the City bears the greater part of it, and as

to the latter all, because the property insured is necessary for the City plant.

Such items as salaries, it is assumed would not be reduced if there were no subur-an consumers, and the suburbs bear only a small proportion of such expenses. The per cent. for suburban service is stated at 5.4%. I fail to find any estimate in figures from the
295 defendant, it being content to claim that no division could be made. If division is to be made at all I have no alternative except to adopt the percentage furnished by complainant. (C. L. B. 20.)

In answer to the 8th paragraph of said order of reference I find and report that complainant's expenses for the year ending March 31st, 1901, were $34,750.91, and that $32,809.98 of that amount pertains to the City proper.

The deduction by defendant's witness Nixon from the expense account tendered by complainant, amounting to $4,948.41 will now be discussed.

The order of reference directs me to report an itemized statement of these expenses, but the books and vouchers of complainant having been minutely examined by defendant's witness Nixon, it would be idle to insert here a very large mass of items not contested. The witness Nixon has treated these deductions at page 94, *et seq.*, of his direct examination and page 2639 in his re-examination. Defendand has treated operating expenses, page 127 of its brief, on the facts, and the complainant at page 280 of its brief.

Complainant has charged $175.00 for three yrears boiler insurance. Witness Nixon deduc-s 2/3 of this as applicable to the other years, which cannot be denied as a fact. There is considerable saving by taking a three years' policy over the one year policy, and all sound business men do so. I know of no system of book-keeping, under which this could be distributed over three years. Every commercial concern would have charged it in the expense of this year. If it should be excluded it would then be the right of complainant to examine former years, as well as subsequent years, and no doubt items would be found paid in other years covering the year we have under examination. I therefore regard it as a proper expense for the year 1901.

296 Witness Nixon objects to $25.00 premium to the S. American Surety Company for the bond of the Superintendent for one year, and also $30.00 paid Chas. F. Parks and Wm. Wheeler each for being surety on the bond of Elber Wheeler, Treasurer. It is quite the custom for corporations to pay for sureties on the bonds of their officers, and being a surety is now recog*i*nized as something for which compensation is to be paid. The fact that the sureties thus paid were stockholders of the Company does not change the situation, especially as the minutes of the company show that the board of directors authorize the payment.

The statute of Tennessee fixes a tax upon a consolidation of corporations. This tax, amounting to $965.00 *and* was paid during this year, and was rejected as an expense by Witness Nixon, and I think properly so. It could not be contended that the obtaining of a

charter in the first instance by the Company was a part of the expenses of a year, and I do not think this proposition in any way differs from that.

Complainant paid taxes on the Tillery Spring's lot, $20.28, and proof satisfies me that this is no part of the working plant of Complainant, but is property gone out of use, but it appears that $8.50 rent was received by this tract, and has been put into the income account; therefore $11.78 will be deducted from the expense account.

The consolidation of the L. B. plant and the Knoxville Water Company was consum-ated in January 1900, but the physical consolidation was not completed until May 15th, 1900; therefore, from April 1st to May 15th, 1900. The pumping station of the now *ad*andoned L. B. plant was operated the full account was $194.38, and as the income from that plant has gone to swell the income of the Complainant during that period, certainly the expense should be
297 allowed as a part of it. This opinion applies to several items charged herein for rent of springs, which have been considered *im*proper by witness Nixon. I think they should be allowed.

The item of two second hand hydraulics jacks $48.20, used in repairing pumping machinery, is disallowed as an expense, but should be added to the plant. The item is not large enough to justify much discussion, but the presumption is they are worth what they cost; also that Complainant is glad to have them on hand for future use.

The item of H. Nicholson, $5.00 for sundry drafting tools destroyed in use and replaced, is held to be a correct operating expense.

The item of B. B. Dallas $64.70 for preparing "I" beams set in place of original ones, is also correctly charged. Nixon has doubtless proceeded upon the theory that they were better than the ones for which they were substituted. Even so on a- item of this size, it would be customery to call it repairs, and I feel the same way about the next item of $25.00 paid Wesley Hurd for furnishing and setting stones in place of former supports of stairs at pumping station.

The item of $829.53 for painting standpipe is proper. It is true it does not have to be done every year, but in other years something else will have to be painted, or a new roof put on, and we can treat it as repairs or expense.

Mr. Nixon rejects $500.00 of the salary of Mr. Kimball the Superintendent, who is an engineer. He thinks this should be charged to construction account. Mr. Kimball is Superintendent and receives a salary of $2,000.00, of which $1,500.00 has been charged to expense and $500.00 charged to construction, this being done by the Company, and Mr. Nixon thinks that an additional $500.00 should have been charged to construction, leaving only $1,000.00 for expense of Superintendant's salary.

298 It is shown by Nixon that the Superintendent at Chattanooga receives $2,750.00 as salary. Mr. William Wheeler, President of Complainant, states that he learned in the fall of 1901 that $500.00 of Mr. Kimball's account was being charged to construction; that he does not regard it as proper and immediately ordered the whole $2,000.00 charged to expense. Complainant in

its brief now claims that $500.00 should be added to the statement heretofore introduced in the record, and I have no hesitation in saying that if the whole had been charged at the time to expense I would certainly have so allowed it; but having kept its books otherwise and made their claims in this case in the same way as their books show, I shall leave it as it is, in view of what I might hereafter say as to the compensation of William Wheeler.

Mr. Nixon deducts half the compensation of William Wheeler as supervising engineer, to-wit, $465.64, and claims that it should go to construction account. Wm. Wheeler is the President of the Company, and really its controlling spirit. It is perfectly clear that he has it and its affairs in his mind at all times his total compensation in the way of salary from his Company was $931.28 for the whole year, and if this company had paid him $1500.00 as President I should not have hesitated for a moment to allow the whole amount.

The use of the words "supervising engineer" as a basis for compensation would indicate that a part of the expense of his compensation should go to salary, but when we look to the substance, and not what it is called there cannot be any hesitation.

The claim is also made that one half of the Treasurer's salary to-wit, $698.48, should be charged to construction and the question admits of no particle of doubt. The Treasurer'- salary is certainly an expense, and is no part of the construction whatever. His
299 whole salary for the year is $1396.96. The compensation of both William Wheeler and Elbert Wheeler are based upon the gross receipts of the company.

I may say generally as to the last three items, to-wit:

Salary of Kimball	$2,000.00
William Wheeler	921.38
Elbert Wheeler	1,396.96
	$4,328.24
Deduct Kimball, charge construction	500.00
	$3,328.24

We have as a result $3,328.24 charged by this Company for the salaries of its President, Treasurer and Superintendent certainly no one could ask that a business of this magnitude and requiring as much ability should be administered for any less.

The next four items rejected were $25.00 for fire and police souvenir and $5.00 contribution to the testimon-al to C. L. Ewing, Superintendent Southern Railway, $2.00 due the Chamber of Commerce, and $3.25 for cigars, I do not think that a Company like Complainant, deriving a large income from purely local sources, and dependant for its future upon the growth of the City of Knoxville, would be expected to refuse the ordinary voluntary contributions for public purposes expected of all good citizens, upon the grounds that it is a corporation. Such a policy would be very unprofitable to the Company, on account of the unpopularity which would ensue.

As to all of these four items, except the cigars, the motive of the Company cannot be questioned. Surely it cannot be presumed that they give away money for the purpose of increasing their expense account for this year. The matter of $3.25 for cigars for the whole year proves that it is not the custom of the officers of this Company to smoke at its expense. I have not taken the trouble to see if
300 the record discloses the exact oc-assion for which these cigars were purch-*es*d. I fel*l* safe in assuming that it was an expenditure strie*B*ly in the line of the ordinary course of business men.

The item of $8.00 paid C. C. Nelson, Recorder, for copying the City ordinances pertaining to the City Water Co., is conceived by me to be an expense so clearly proper as to admit of no discussion whatever.

The contribution of $5.00 to the Galveston sufferers is objected to, and I consider it a proper expense, as also two advertisements of $25.00 each in the morning and evening*s* papers at Knoxville on the occasion of the Carnival. I also consider the contribution of $15.00 to the new Hospital as a proper expense; also $3.00 contributed to the entertainment given by the Chamber of Commerce to the delegation of business men from Nashville. And we have $25.00 contributed to the Carnival, which is also a proper expense. No doubt the crowds brought to town by the Carnival increases the Water Company's receipts many times this amount, and the Water Company should have paid its share of the expenses.

The item of $300.00 legal expenses to Chas. T. Cates, Jr., is rejected by the witness Nixon, because there is no explanation as to what it was for. Complainant shows the voucher for its payment to Cates for legal expenses. The Superintendent, Mr. Kimball, swears that the amount was actually paid, as shown by the voucher; that he has no knowledge of the items of the expense incurred by Mr. Cates. I do not consider that the Water Company was bound to introduce Mr. Cates to testify, when, where, and for what he spent the money. I can*not* simply say that such an item is fraudulent.

The next rejected item is Elbert Wheeler $13.23, which Mr. Kimball shows in rebuttal was really never paid on this year's expense account, and therefore cannot be deducted.

301 The item of $6.96 for the electrical survey to ascertain whether or not the pipes were affected by electrolysis is a perfectly proper expense.

I am mindful of the fact that even among the best book-keepers there will be found differences of opinion. Many items come up which might be charged to one account or another with equal reason.

In the way this expense account has been treated Complainant is attacked on all charges to this expense account, but does not get the benefit of possible charges made to other accounts which I might think belonged to expense account.

The result of these views is to reduce complainant's expense account tendered, by the three items of $965.00 tax on consolidation; $11.78 tax on Tillery Street tract, less rent, and $48.20 for two hydraulic jacks, total $1,024.98.

In answer to the 9th paragraph of said order of reference I find and report that the extent and kind of investigation made by defendant consisted of a formal communication from A. S. Birdsong, Chairman of the Water Committee of Defendant, of date July 16th, 1900 (Ex. 4 to answer), the investigation of other plants and their rates stated in deposition of Birdsong (Rec. 1429), and perhaps other parts of the testimony, not necessary to point out here. To this letter Complainant made reply July 20th, 1900 (Ex. 6 to answer). This reply would convey to my mind the impression that complainant did not intend to expose its business to the committee and would justify the City in proceeding independently of com-
302 plainant, without further negotiations, and the proof shows that witness Birdsong, and others, made diligent efforts to inform themselves.

In answer to the 10th paragraph of the order of reference:

Annual allowance for depreciation (D. L. B. 142; C. B. 258; C. S. B. 10), complainant claims 2% as a fair allowance for annual depreciation. This amount was allowed in the Chattanooga case. Defendant's witness Nixon says this would not be unreasonable, although there is some proof of smaller percentage in other cases. The proof shows the *gross* depreciation to be in what becomes obsolete, or insufficient for increased population. In a rapidly growing City like Knoxville mains will have to be taken up and larger ones substituted; the same as two pumps. The 2% is clearly reasonable, and I so find.

I have heretofore stated that past depreciation, either complete or incomplete, is not material to this case. The subject is fully treated by William Wheeler. I am directed to make a finding, and am content to find and report his figures as the best evidence on the subject, being culminated depreciation $95,987.04. The claim for incomplete depreciation seems to be abandoned.

In answer to the 11th paragraph of the order of reference.
303 (D. F. B. 143; C. S. B. 3 to 10), I have found a fair value of the plant at the time in use for the City to be $570,887.95; the expenses within the City $32,809.98; the income $63,342.40, and the net income is therefore $30,532.42, and that 2% is a fair allowance for depreciation.

The legal rate of interest in Tennessee is 6%. No lower rate is known, except with mortgages on improved property, and the amount limited to much less than the value of the property. There is practically no risk in this. It is clear that no one in this State would think of giving par for stock in this kind of Company, subject to the risks of litigation and competition if it paid less than 6%. Fair income or interest is a local question, not controlled by cases from other States. The Chattanooga case fixed 6%. Clearly this is fair, it follows that with 6% and 2% for depreciation making 8% on the above, we have $45,671.03 which is $15,138.61 more than I have found would be the net income under the ordinance. The ordinance rates would not yield a fair income to complainant.

All of which is respectfully submitted.

HENRY O. EWING,
Special Master.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company *vs.* Mayor & Alderman of Knoxville. Master's Report. Filed August 19, 1904. J. T. Carter, D. C.

304 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Plaintiff's Exceptions to the Master's Report.

Exceptions Taken by the Plaintiff to the Report of Henry O. Ewing, Special Master of this Court, Filed Herein August 19th, 1904.

First Exception. For that the Master in his said report finds and holds that the fair invested value of the property and plant of the Knoxville Water Company, the same being shown in the analysis prepared and filed in this cause by William Wheeler and Frank C. Kimball, and in the deposition of said William Wheeler and said Frank Kimball "has little weight except as a guide to what is in the plant;" whereas, the Master should have found that the fair and reasonable invested value of the plant, as shown in the record in this cause, and especially in the depositions and analysis of William Wheeler and Frank C. Kimball is, the "fair value of the plant" by which the reasonableness of the ordinary rates contested herein is to be tested in this suit; and the Master should have adopted the analysis method, or invested value method of ascertaining and determining the fair value of the property of the Knoxville Water Company, and should have fixed the fair value thereof on March 31st, 1901, at the amount reached by following said method, and shown in the depositions and analysis of the witnesses William Wheeler and Frank C. Kimball. (C. B. 25-27.)

305

Dep.	W. Wheeler	R.	p.	118.
"	" "	"	pp.	192-193.
"	F. C. Kimball	"	"	916-917.
"	T. T. Johnson	"	"	1325-1326.
"	Arthur Hider	"	p.	1289.
"	W. Wheeler	"	pp.	106-113.

Second Exception. For that the Master finds the total value of the plant and property of the plaintiff within and without the City at $608,427 95, and the value of that part of the property which pertains to the City proper, at $507,887.95; whereas, he should have found the fair value of the entire plant to be not less than

$1,000,596.00; (C. B. p. 101) and should have found the fair value of that portion of the plant which pertains to the City proper to be .9383 per cent of this value of the entire plant.

Dep. E. Wheeler R. p. 719.
" " " " " 725.
" W. " " " 181.
" E. " " " 714.

These references show construction costs, indebtedness, amount of common stock, value of bonds &c.

Third Exception. For that the Master has not included in the value of the plant anything for marketing securities of the plaintiff company; whereas he should have allowed for marketing securities 10% of the ascertained value of the plant. (C. B. p. 47.)

Dep. W. Wheeler R. p. 13.
" " " " " 14.
" " " " " 127.
" I. L. Ludlow " pp. 1214-1215.
" T. T. Johnson " p. 1331.

306 *Fourth Exception.* For that the Master allows for "going concern," only the sum of $60,000.00; whereas, the only testimony in the cause fixing the value of "going concern" is that of William Wheeler, who first estimates said value upon the basis of his experience at $106,706.92 (Record p. 3196); and then estimates the same upon the basis of its relation to income, and sets out his calculations in full upon page 3198 of the record, the value of "going concern" there reached being $133,336.00. These two estimates, each of which exceeds $100,000.00 are the only statements in the record giving figures upon which the Master can base a conclusion, and it follows therefore that the allowance for "going concern," should not in any event be less that the smaller of these two estimates, and should, according to the weight of the testimony, be fixed at the amount of the larger estimate. (C. B. 42-46; p. 267.)

Dep. W. Wheeler, R. pp. 123-124.
" " " " " 3196.
" " " " " 3197.
" " " " " 3198.
" " " " " 107.

Fifth Exception. For that the Master allows nothing to the Water Company for "Contractors' profits" or for "contingencies"; whereas the Water Company is clearly entitled either to the allowance of 12% for "Contractors' profits" as those words are used in the analysis and deposition of William Wheeler and F. C. Kimball, or to the allowance for contingencies made in the deposition of Wingfield. (C. B. pp. 265-266; C. S. B. pp. 1-2.)

Dep. W. Wheeler, R. p. 25.
" Wingfield, " " 2910-2918.
" " " " 3000-3001.
" Hider, " " 1301.
" Johnston, " " 1327.

307 *Sixth Exception.* For that the Master did not include in the value of the property the "sixteen hydrants" erected by the plaintiff in what is known as the Old Tenth Ward of the City of Knoxville; whereas, the Master should have included said "sixteen hydrants" in the valuation of the plant at the sum of thirty-six dollars each, the same having been erected by order of the defendant. (C. B. p. 210.)

Dep. F. C. Kimball, R. pp. 3371-3372.
" " " " " " 1640.

Seventh Exception. For that the Master allows the plaintiff for "tools, teams, and stock," only the sum of $9,789.47; whereas, he should have allowed for these three items the sum of $12,221.87, as stated by the witness W. Wingfield. (Dep. Wingfield. p. 2918.)

The amount allowed on this account by the Master is taken from the deposition of F. C. Kimball, p. 1034, but upon further examination it will be seen, that Mr. Kimball on said page, testifies only to supplies, and it is proper, therefore, to add to his amount the value of the other items, included by Mr. Wingfield under the head of "Tools, Teams, and Stock." (Rec. p. 1034.)

It is evident that Mr. Wingfield added to Mr. Kimball's statement of supplies on hand, viz: "9,221.87, the sum of $3,000.00, and ommitted Mr. Kimball's statement of "Operating supplies," viz: $567.60. (C. B. p. 253.)

This $3,000.00 added to Mr. Wingfield covers such items as teams, office fixtures, &c., not supplies.

Dep. W. Wheeler, R. p. 496 & p. 556.
" F. C. Kimball, " pp. 1033-1034.

Eight- Exception. For that the Master allows for interest on capital during construction only .0165%; whereas the proof shows that the proper allowance would be from 3% to 4½%. (C. B. p. 266.)

308 Dep. Wingfield, R. p. 2950.
" Hider, " " 1301.
" Johnston, " " 1327.

Ninth Exception. For that the Master makes no allowance to the Water Company for "General Administrative Service" expenses not compensated in salaries, nor charged to operation, and other similar matters; whereas he should have allowed not less than 5% upon the ascertained value of the property for such services. (C. B. 45.)

Dep. W. Wheeler pp. 124-125. 126.

Tenth Exception. For that the Master allows nothing to the Water Company for "Blind services," whereas; he should have allowed for such "Blind services" the sum of $3,390.00 as shown in the deposition of William Wheeler. (C. B. p. 253-254.)

Dep. W. Wheeler, R. pp. 187. 188 438.

Eleventh Exception. For that the Master disallows as Operating expenses the tax on consolidation of Knoxville Water Company with Lonsdale Beaumont Water Company, viz. 965.00 whereas the Master should have allowed same as operating expense of the year when it was paid, or having declined to do so, he should have added said sum to construction account.

Dep. Kimball, R. p. 3288.

Acts Tenn. 1899, Ch. 432, Sec. 10 p. 1050.

Twelfth Exception. For that the Master declines to charge all salaries of the treasurer, Supervising Engineer, and Superintendent to Operating expenses, including such parts of said salaries as are charged on the books of the Water Company to Construction, it being apparent that charging of said salaries otherwise than to operating Expenses, was erroneous on the part of the Company. (C. B. p. 291, 292.)

Dep. W. Wheeler, pp. 3215-3216.

Thirteenth Exception. For that the Master in said report allows nothing to the Water Company on account of culminated
309 or completed depreciation; whereas, he should have allowed the Water Company for culminated depreciation the sum of $95,987.04, and should have added thereto the accretions on the same amounting to $11,028.64. (Rec. p. 166-H.)

Culminated depreciation should be treated, according to the method adopted by the Master, as expense of maintenance, and as it has not been repaid, should be apportioned as expense, *pro rata,* among the several years from 1901 to 1913, inclusive, the last being the date when Water Company's contract with the City expires. (C. B. p. 52)

Dep. W. Wheeler, R. pp. 174-175.
" " " " " 366-367.
" " " " " 129 to 166 H.

R. E. L. MOUNTCASTLE,
C. T. CATES, JR.,
J. W. CALDWELL, *Sols.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company *vs.* Mayor & Alderman. Complainant's Exceptions to Master'- Report. Filed Sept. 17, 1904. J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States for the Eastern District of Tennessee, at Knoxville, Tennessee.

No. 1260. In Equity.

THE KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

310 Come the plaintiff, the Knoxville Water Company, and except to the action of the Court in allowing the defendant the Mayor and Alderman of the City of Knoxville to file as exceptions to the Master's report the exceptions filed by the said Mayor and Alderman to the preliminary draft of the Master's report when submitted to counsel.

The Master's final report wa- filed on the 19th day of August, 1904, and said exceptions of the defendant were re-filed as exceptions to said final report on the 20th day of September, 1904, more than one month after said final report of the Master had been filed, wherefore, plaintiff moves the court to strike said exceptions of the defendant from the files because not filed in time, and asks for a confirmation of the Master's report.

THE KNOXVILLE WATER COMPANY,
By J. W. CALDWELL.
SHIELDS, CATES & MOUNTCASTLE, *Sols.*

(Endorsement:) No. 1260. Knoxville Water Co. *vs.* M. & A. of Knoxville. Motion to strike from files the exceptions of Defendant. Filed Sept. 23, 1904. J. T. Carter, D. C.

311 In the Circuit Court of the United States, Sitting at Knoxville, Tenn.

#1260.

KNOXVILLE WATER CO.
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Petition of the Defendant.

To the Honorable C. D. Clark, Judge, &c.:

The defendant in the above styled cause, hereby presents its petition, for the following purposes to-wit:—

First. The Order of Reference appears to have been entered on the record, showing that it was made by consent of parties. This was done by inadvertence, and was only recently brought to the attention of counsel for defendant it was likewise done by mistake. The Defendant did not consent to the order of reference, but only

waived objection to the Clerk being made Special Commissioner for stating the account. The order of reference was stoutly contested by defendant's counsel, as fully appears from the affidavits of W. R. Turner, hereto attached and marked Exhibit "A," and from the letter of J. W. Caldwell, counsel for the plaintiff, dated October 2nd, 1902, written while the controversy over said order of reference was pending, and enclosing the drafts of the order of reference proposed by each party, for the court's action thereon. Said letter is made Exhibit "B" thereto. The said drafts are likewise on file, or with the files in this cause, the one submitted by the plaintiff containing *twelve propositions,* and that submitted by the Defendant containing *twenty-four propositions,* and the latter omitting the word "consent." It is hereto attached marked Exhibit "C," and has endorsed thereon, in the handwriting of J. W. Caldwell: *"This draft submitted by defendant."* The briefs are like- on file,
312 which were submitted by the respective parties upon the proposed order of reference. That of the plaintiff is marked "Filed October 10th, 1902" and shows fully the grounds of objection, or most of the grounds of objection, to the order of reference submitted by the plaintiff.

The Court, in response to the controversy over these two drafts of the order of reference added Section 12 in his own handwriting to the order of reference, submitted by the plaintiff, which Section 12 reads as follows:—

The Special Master will report on any other special matters or question about which he is specifically requested to report by either side in writing within ten days after entry of this order; said requests to be filed and made part of the record. In case an irrelevant or unnecessary inquiry is opened up by such request, the costs thereof will be taxed against the party making such request, and the Master will report what, if any needless costs are thus caused.

Enter this.

CLARK, *J.*"

This order thus amended by the Court, was filed October 6th, 1902.

Thereupon, and within the time allowed, the defendant submitted the order of reference, or rather the additional propositions embodied in the proposed order of reference in the Clerk's office. The taking of evidence had proceeded for sometime, when on the 2nd of November 1902, the Court in response of an application made for instructions to the Master, substituted for said paragraph #12, the following:—

"In taking the evidence and directing the inquiry before him, the Special Master possesses the usual powers of Masters in
313 Chancery, and is hereby expressly vested with power and authority to determine what subjects are relevant and pertinent matters of inquiry under the foregoing order of reference, and also the proper method of proceeding, or requiring the production of evidence of any disputed fact, and any and all questions arising in regard to the revelancy of any subject of inquiry, and the right to call for, or introduce any part of the evidence:—the Master will of

course determine such issues, and for that purpose will hear such arguments as satisfies in regard to these matters. Order. That this be substi-uted for paragraph #12 in order of reference heretofore made which paragraph is hereby vacated.

Enter this.

CLARK, *J.*"

The defendant neither consented to the original order of reference, nor to the amendments of the same, as will appear from the briefs that were filed. The action taken in amending the order of reference, was not taken during term time, and no entry of record has yet been made in regard to same.

Second. Your petitioner asks that the original order of reference be altered and amended so as to state the fact that defendant did not consent to the order of reference, but only waived objection to the Clerk stating the account thereunder.

It is competent for the court to alter or amend an interlocutory order of this kind at any time during the pendency of the cause as will appear from the following cases:—14th Federal Reporter 812; 21 Fed. Rep. 51; 8th Fed. Rep. 434; 4th Fed. Rep. 318; Foster's Practice, Section 379 and other cases.

Defendant further asks that an order, or orders *nunc pro tunc* be made and entered, showing the action of the Court upon the record, adding the clause #12 to plaintiff's order of reference, and thereafter vacating the same and substituting another order in its place. It is always competent for the Court to make such order, especially where, as in this case, the facts appear from the papers on file, and from the orders or opinions of the Court over his own signature.

See Bates Practice Section 691; Foster's Practice Section 379; Wright *Ex parte*, 134 U. S. 136; 9th Wallace 736, 141 U. S. 415. And petitioner prays for general relief.

STATE OF TENNESSEE, *County of Knox:*

G. W. Pickle being duly sworn deposes and says that he is one of the attorneys for petitioner named in the foregoing petition and that he has read the same and knows the contents thereof, and the said statements made are true as he verily believes.

(Signed) G. W. PICKLE.

Sworn to by the said G. W. Pickle before me and by me subscribed on this the 30th day of Nov. 1904.

(Signed) W. T. KENNERLY,

[SEAL.] *Notary Public.*

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Personally came before me the undersigned authority W. R. Turner, and made oath in due form of law, that he was one of the Counsel for the Defendant in this cause, and that he did not consent to the order of reference entered in this cause,—on the contrary, when the same was presented to him by Plaintiff's Counsel, he objected to the statement therein that the order was made by consent, and gave notice that he would not consent to such order. He was not aware until informed of the fact recently that the order was entered upon the record, as originally drafted showing and reciting that it was by consent. The papers on file in the cause show that Defendant's counsel were all the time objecting to the order of reference made. The only matter consented to by Defendant's counsel was that the Clerk of the Court might be appointed Special Commissioner to state the account. He directed that the consent should be stricken out, and noted the fact by a cross mark upon the margin of the paper upon which it was typewritten.

W. R. TURNER.

Sworn to and subscribed before me, This 26th, day of Nov., 1904.

[SEAL.] W. T. KENNERLY,
N. P. of Knox Co.

315 EXHIBIT C TO DEF'T'S PETITION.

OCT. 2, 1902.

Hon. C. D. Clark, Chattanooga, Tenn.

DEAR SIR: As parties to cause of Knoxville Water Company *vs.* Mayor & Alderman of Knoxville, cannot agree as to wording of order of reference therein, the clerk is requested to hand you the enclosed paper viz; memorandum briefs for each side, an order of reference of eleven (11) items proposed by plaintiff and an order of reference of twenty four (24) items proposed by defendant, each draft of order has a pencil slip attached to show by whom it is proposed,

I am very truly yours,

J. W. CALDWELL.

Exhibit B. to petition of def't.
This draft submitted by Defendant,
Exhibit C. to def't's petition.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Order of Reference.

This case is referred to H. O. Ewing, as Special Master who is ordered to hear all proof offered by the plaintiff and the defendant, and report to this Court as follows:—

"I."

The amount really and necessarily invested by the plaintiff in its entire plant and property.

"II."

316 The amount invested in the corporate limits of the City of Knoxville, including the machinery, apparatus and all appliances and property of every kind used in the operation of the water plant in said corporate limits.

"III."

The amount and character of plaintiff's indebtedness and the property covered by it on March 30, 1901.

"IV."

The value of plaintiff's entire plant and property at the time of the passage of the ordinance of March 30, 1901.

"V."

The actual value of the plant and property within the corporate limits of the City of Knoxville, including the machinery, apparatus and all appliances and property of every kind used in the operation of the plant, within said corporate limits, when the ordinance of March 30, 1901 was passed.

"VI."

The gross revenue derived by the plaintiff per annum from its entire plant and property under the rates in effect prior to March 30, 1901, and how much same would be reduced by said ordinance of March 30, 1901.

"VII."

The total revenues derived by the plaintiff per annum from water supplied within the corporate limits of the City of Knoxville, under rates in effect prior to March 30, 1901 and how much same would be reduced by said ordinance of March 30, 1901. Likewise the total revenues derived by plaintiff per annum for water supplied outside the City limits of said City.

"VIII."

An itemized statement of the plaintiff's expenses per annum, and what of the same pertains to the property within the
317 corporate limits of the said City, prior to the passage of said ordinance.

"IX."

The extent and kind of investigation made by the defendant before the passage of the ordinance of March 30, 1901; the notice given to the Plaintiff, when and by whom.

"X."

What would be a fair amount, if anything, to allow annually for depreciation of the water plant and property of the plaintiff from natural causes, and by wear and use and depreciation accrued to March 30, 1901.

"XI."

Whether or not the rates fixed by the defendant's said ordinance of March 30, 1901 are reasonable and would afford or permit a fair and reasonable income on the capital invested in plaintiff's plant and property.

"XII."

Whether the rates fixed by the defendant's said ordinance of March 30, 1901 are reasonable and would afford or permit a reasonable income on the fair value of said property actually being applied and in use for public purposes at the date of said ordinance; and in this connection report the relative values of that portion of the property so applied and used within the City and of that portion lying outside of the City limits of said City.

"XIII."

What per cent. constituted, at the date of the passage of said ordinance, a fair and reasonable return on investments of the character involved in this case in the money markets of this country, as they existed at that time.

"XIV."

What portions of the Plaintiff's property have been aban-
318 doned, if any, for public use, where situated, and the cost of its construction, and its present value. Likewise what protions, if any, of plaintiff's property has suffered depreciation from general causes, and to what extent. What portion, if any, is unsuitable or inadequate for public use.

"XV."

Under what arrangement or contract the Plaintiff acquired the plant of the Lonsdale-Beaumont Water Co., and of the plant and property of the North Knoxville Water Company from Wheeler & Parks:—the price paid for the same, how paid, the fair and rea-

sonable value of the same at the time of the purchase, and any other material facts relating to the asquisition of these properties.

"XVI."

The amount of the capital stock of the plaintiff Company; to what extent and to whom shares have been issued, when issued, and the subscription price paid for the same, the present holders of such shares, how, when and at what price acquired.

"XVII."

The amount of the bonded indebtedness or other indebtedness of the plaintiff Company, how, when and by what authority created, to whom due, and what interest the same bears.

"XVIII."

The value of the franchise of said company apart from its tangible properties and how acquired.

"XIX."

The valuation at which the properties of said Company have been assessed for taxation, at and prior to the date of said ordinance.

"XX."

What amounts if anything, have been withdrawn from the assets of said Company by stockholders, either directly or indirectly, when and by what authority withdrawn.

"XXI."

To what extent the services and revenues of the plaintiff Company have been increased since the passage of said ordinance of March 30, 1901.

319 "XXII."

Whether leave of the City to operate plaintiff's plant was certified upon the application for its charter and registered with it.

"XXIII."

Whether the plaintiff Company and the Lonsdale-Beaumont Water Co., and Wheeler & Parks, owning the North Knoxville plant, were competing Companies at the time of their alleged consolidation, and whether the transfer of that Company's property was validly made to Compl't.

"XXIV."

The Special Master will report the facts as they appear from the record in regard to the plea of *res adjudicata*, set up in the answer.

The Special Master will take proof with all reasonable dispatch and file his report in time for action at the next term of this Court.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* Mayor & Alderman of City of Knoxville. Petition to correct Order of reference. Filed Dec. 3rd. 1904. Henry O. Ewing, Clerk.

320 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
M. & A. OF THE CITY OF KNOXVILLE.

Affidavit of H. O. Ewing.

Henry O. Ewing, being duly sworn, deposes and says that he is Clerk of the Circuit Court of the United States for the Eastern District of Tennessee; that he was present and in the Court room at Knoxville, Tennessee, during the September term 1902, when Mr. Turner, representing the defendant, appeared before the Court and contended for a hearing of the above styled cause at that term.

Affiant has been asked by defendant to state his recollection of what occur-ed, and what was said.

Affiant calls attention to the fact that complainant had taken no proof in the case and was, of course, not ready for trial.

Affiant's recollection is that Mr. Cates, for complainant, in resisting Mr. Turner's application for a hearing at that term stated that he had taken no proof and that none could or should have been taken, because the case would have to go to a master, as was done in the Chattanooga case, and that he was therefore not in default in his failure to take proof; to which Mr. Turner replied denying the necessity for a reference and contending that this was but an ordinary case in equity, that it did not require a reference, and that if complainant had taken its proof under the rules there was no reason why the case should not now be heard.

321 Affiant did not particularly charge his memory with the details, because he had no *exception* of thereafter being appointed Master to take the reference. On the contrary had expressed himself that some one else should be appointed, but so far as it goes affiant believes his recollection is accurate.

HENRY O. EWING.

Subscribed and sworn to before me this 3rd day of December, 1904.

JNO. D. KEY,
Deputy Clerk.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company *vs.* Mayor & Alderman of Knoxville, *et al.* Affidavit of H. O. Ewing. Filed Dec. 5, 1904. J. T. Carter, D. C.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
M. & A. OF THE CITY OF KNOXVILLE.

Demurrer to Amended Bill.

The defendant comes and demurs to the amended bill, and for cause of demurrer shows:

1.

That said bill fails to show by specific or sufficient averment that the income is insufficient to afford the complainant a fair
322 return, *i. e.*, and income insufficient to *to* pay its reasonable operating expenses and afford an adequate depreciation fund and a reasonable rate of interest upon the value of its plant, but shows the contrary.

2.

Said bill fails to show the value and income of its plant for the year after the ordinance assailed went into effect, to wit, 1901, 1902 so that the Court can see whether such income would afford the fair return aforesaid for that year. The averment of value of plant and its income for the proceeding year is insufficient, the ordinance not being nor intended to be in operation for that year.

Wherefore, defendant prays that said bill, as amended be dismissed.

G. W. Pickle, Attorney for defendant, states on his oath that the above demurrer is not filed for delay, but in good faith, and that he verily believes the same is well founded in law.

G. W. PICKLE.

Subscribed and sworn to before me this Dec. 3rd, 1904.

HENRY O. EWING, *Clerk.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company *vs.* Mayor & Alderman of Knoxville, *et al.* Demurrer to Amended bill. Filed Dec. 5th, 1904. J. T. Carter, D. C.

323 In the U. S. Circuit Court.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF CITY OF KNOXVILLE.

Memorandum of Points with Respect to Depreciation made in Argument but not Contained in Briefs Before the Court.

In the brief the general argument is made with respect to allowances of depreciation and this argument is attempted to be met by the Master on the idea or ground that the consumers of the year ending March 31, 1901, and subsequent years should not be required to repay as expenses or otherwise culminated depreciation representing what necessarily went out of the plant in previous yraes.

The argument as made by counsel for the City was that the culminated depreciation should be considered an annual charge and from that it must follow that it would be met out of the rates for the year on which said charge should be made, and if not so met by the rates, it was argued, they could not subsequently be refunded.

The logic of this position inevitably leads to the conclusion that the culminated depreciation for the year under investigation in this case, to-wit: the year ending March 31, 1901, being admittedly at least an annual charge as cost of maintenance or expenses, upon the rates for that year should be met and paid by such rates, and therefore must be taken into consideration as a part of the expenses of said year at last in ascertaining the fact as to whether or not a revision of said rates deprives plaintiff of a fair return upon its property in use for the public. In other words if efficient and economical administration justifies and demands the substitution of new for obsolete or worn out equipment, to the extent of such loss to the Company, which loss cannot be properly figured into the fair value of the existing plant, after its removal, the Company, neces-
324 sarily is allowed said depreciation as an annual charge as conceded by counsel for defendant in argument and must be made up out of the rates whether the same be classed as expenses or otherwise; certainly it is a part of the cost of the efficient maintenance of the plant.

This claim for plaintiff in the original bill in this cause was to the effect that the culminated depreciation of the year in question was $30,000 to be charged as expenses or cost of maintenance, and the defendant in its answer claims that this amount should be added to the construction account of plaintiff.

The Master on the insistance of defendant has refused to allow it in the construction account, and inevitably the allowance therefore must be made as cost of maintenance.

For the year ending March 31, 1901, the culminated depreciation as part of cost of maintenance of the plant, was as follows from the record:

On wall and engine pit	$450.00	Record,	p. 129
One half suction pipe tunnel	385.00	"	p. 129
Cement floor	122.00		p. 129
Wooden floor	40.00	"	p. 129
1/5th of spiral stair	50.00		p. 129
Tool and store house	161.40	"	p. 133
Pump, machinery & appurtenances	16,048.51	"	p. 135
Chimney, etc.	2,163.76	"	p. 133
Boilers, etc.	2,297.00		p. 136
Piping	3,556.45		p. 146
Tool and storage house	25.00		p. 159
Chimney and flue	225.00		p. 159
Coal chute	597.12	"	p. 160

Total cost of depreciation as shown by pages of record cited for the year ending March 31, 1901, -26,121.74.

325 It is manifest that no rate, or return for the property actually in use can be made which does not under all the authorities provide for expense and cost of maintenance of the plant and for that reason in any event this sum should be added to the expense account for the year ending March 31, 1901.

But it may be insisted that all of this culminated depreciation of this year should not be treated as an annual charge as claimed by counsel for defendant, but that the rate payers of that and subsequent years should bear a proportion of that down to the year 1913 when the franchise of the plaintiff expires. But we insist if that plan be equitable, then it would follow that any culminated depreciation immediately preceeding this year would likewise equitably be treated as for the benefit of the subseqeunt years thereto as the rate payers of said subsequent years are directly benefitted by the more effecient and economical service made by virtue of said culminated depreciation represented by the substitution of the more efficient and newer machinery for obsolete or impaired machinery, or that which by economical management has become no longer useful and for that reason was by the Master taken out of the value of the existing plant, the same having been removed in fact by the Company at said dates.

With this in view we set out the record page so that the Court can see the amounts of culminated depreciation for the year ending March 31, 1900, directly relating to and for the benefit of subsequent rate payers:

Pipe	3,963.20	Record,	p. 145
Lonsdale Beaumont Real estate	1,000.00	"	p. 164
" " improvements on real estate	33,335.00	"	" 165
Lonsdale Beaumont improvements on building and machinery at Pumping station	14,070.00	"	p. 165
Total	$52,388.20		

326 For the year ending March 31, 1899, upon which the rate payers for the year ending March 31, 1901, will receive the benefit the record shows as follows:

Pipe	$279.39	Record, p. 144
Store house and fence	289.80	" p. 134
Total	-569.19	

In this view of the case now under discussion it is manifest that the rate payers for the year ending March 31, 1901, or in subsequent years up to 1913 should bear their proportionate part of this cost of maintenance if the same is not an annual charge for the year.

This makes in addition to the ordinary expenses the sum of $79,332.60 as the cost of maintenance represented by the culminated depreciation for the years 1899, 1900 and ending March 31, 1901.

It is manifest therefore that even if this be not treated as annual charge plaintiff cannot be required to lose this sum of the cost of maintenance made directly for the benefit of the Water Company consumers, but that it by some equitable basis, either by annual charge or pro rata charge for the years shall be allowed.

Respectfully submitted,

J. W. CALDWELL,
SHIELDS, CATES &
MOUNTCASTLE,
For Plaintiff.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* Mayor & Alderman. Memorandum of record in Depreciation. Filed Dec. 7, 1904. J. T. Carter, Deputy Clerk.

327 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

The Affidavit of Chas. T. Cates, Junior.

The said Chas. T. Cates, Jr., being duly sworn makes the following statement, to-wit:

That when this cause was reached on the call of the docket, at the September term, 1902, the defendant announced ready for trial, but the plaintiff stated that on account of negotiations which had been pending between it and the City, looking to the settlement of the matters in controversy in this cause, and further, because it believed that this cause should be referred to a Special Master to hear proof, ascertain and report the facts, it had not taken proof in sup-

port of the allegations of its bill. Thereupon counsel for both sides were heard on this question, and the Court decided that it would not force plaintiff to a trial at that term, but would order a reference to a Master, and both parties having waived objection to the appointment of the Clerk of this Court as Special Commissioner, the Court requested the parties, if they could not agree upon an order of reference, to submit, each of them, drafts of such orders. Thereupon, plaintiff submitted a draft or form of order or reference and Defendant also submitted as a draft or form for such order of reference the paper which is filed as exhibit "C" to defendant's petition filed herein December 3rd, 1904, and defendant submitted along with said paper a brief which was filed October 2nd, 1902. The
328 Court added to the draft of the order submitted by plaintiff an additional section or item, to-wit: section 12, and ordered that plaintiff's draft be filed as an order of reference in this cause, which was done on October, 6th, 1902, and pursuant to said section 12, the defendant, on October 10th, 1902, filed thirteen additional items of reference. A controversy being raised as to the admission of evidence before the Master, the Court struck out section 12 of the order of reference, and substituted for it the order found in the record in Journal "R," page 521, filed November 21st, 1902. No exceptions was taken by Def't or effort made to change the order of reference until as stated in the bill of Exceptions tendered by Plaintiff.

CHAS. T. CATES, JR.

Sworn to and subscribed before me this the 6 day of January, 1905.

JAS. T. CARTER,
[SEAL.] *D'p'ty Clerk.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company *vs.* Mayor & Alderman of the City of Knoxville. Affidavit of Chas. T. Cates, Jr. Filed, Jan. 6th, 1905. J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States for the Northern Division, Eastern District of Tennessee.

In Equity. #1260.

KNOXVILLE WATER COMPANY
vs.
BOARD OF MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

329 *Prtition of Defendant for Rehearing.*

Your Petitioner, the Board of Mayor & Alderman of the City of Knoxville, respectfully shows unto your Honor:

First. That recently your honor has handed down opinion in this

cause, disposing of the questions involved and that decree has, within the past five days, been entered in accordance with that opinion, granting the complainant the relief sought by its bill, and enjoining Petitioner's ordinance of March 30th, 1901 undertaking to regulate and reduce the water rates of Complainant Company as unconstitutional and void upon the ground that it operates to deny to the plaintiff a fair return, and to confiscate its property, and is therefore unconstitutional and void.

In that opinion and in the decree of the Court based thereon, your honor has declared said ordinance unconstitutional and void upon the situation and state of facts as to value of plaintiff's property and income derived from same existing at and prior to the date of the ordinance, and has declined to consider the situation and facts existing subsequent to the date of the ordinance, though a period of nearly nine months had elapsed after the passage of the ordinance before the filing of the bill in this case.

Petitioner has filed its petition herein, which is here and now referred to, seeking to have the situation subsequent to the passage of said ordinance inquired into, and the validity of said ordinance passed upon the Court with reference to the situation existing subsequent to its passage. Petitioner avers that it is aggrieved by said decree and opinion of the Court upon which it is based, and insists that the grounds stated in the opinion, upon which said decree is based, are erroneous, and that your honor should recall said
330 decree for the reasons herein stated, and rehear this cause.

The reasons for rehearing will now be stated?

Second. Petitioner complains and insists that your Honor erred in the matter of law in the following statement, found in the 3rd section of said opinion, to-wit:

"Another proposition which I regard as manifestly sound is that "the validity of the ordinance here called in question must be de- "termined upon the situation as it was at the time of the enactment "of the ordinance into a law. It was at that time, and in view of "the facts then existing, valid or invalid and its validity or in- "validity cannot be made to depend upon changes in the situation "which might, or probably would have resulted during years sub- "sequent to the passage of the ordinance. * * *

"It is agured, for example, that a ch-apter rate may have so in- "creased consumption, and that growth in population may have so "increased the demand that a fair and reasonable return would have "been received under the ordinance in the near future after its pas- "sage, but it obviously requires no extended discussion to see that "when the Court is called upon to adjudge the validity or inva- "lidity of the ordinance no such question as that can arise, or be "permitted to affect the result of the case. The Court is without "power to retain the case in court and require submission to the "ordinance with a view to the speculative question of whether or "not the conditions may have so changed as to render the ordinance "valid, which would be invalid on the state of case established by

" the evidence as existing at the very date of the enc*a*tment.
331 " It is to no purpose whatever, in dealing with the ordinance
" and its validity under the Constitution, to urge a merely
" speculative contention as to whether the conditions would or might
" be different in the future from what they had been in the past and
" were at the date of the passage of the ordinance. * * * *

"Consequently the cases hold, as I understand them, that the va-
" lidity of the ordinance must depend on the facts found to have
" existed at the time the rate regulating ordinance was enacted, and
" this view will dispose of certain parts of the argument and certain
" objections to the evidence based upon the ground that the Master
" refused to rec*ie*ve evidence of what would or might have been the
" condition of things during the year or years immediately s*e*cceed-
" ing the passage of this ordinance.

These propositions, petitioner submits, are erroneous, upon the authorities, as matter of law.

Petitioner avers, as shown more specifically in another petition filed herein and made part hereof, that the situation existing after the passage of the ordinance, may *may* be inquired into, and should be, and if the ordinance is valid in view of that situation, it should be sustained.

This is the holding of the Courts in case of the Union Pacific Railroad Co., 64 Fed. Rep. 165-189 and Smythe *v.* Ames, 169 U. S., 466-550; 42 Lawyers' Ed., 819-850. This holding is in conflict with the action of the Special Master, which was confirmed in the Chattanooga case. In that case the year subsequent to the passage
of the ordinance was adopted as the one determinative of its
332 validity. L*l*kewise, on a discussion of this question pending
the taking of the evidence, Your Honor determined that the investigation should extend upon the authority of Smythe *v.* Ames, *supra,* to the period subsequent to the passage of the ordinance, and under directions given by Your Honor at that time, after full hearing, the evidence was taken as to the year 1900-1901, which is in this record and has never, as suggested by the Clerk, been excluded.

The case of Day *v.* Railroad Company, 35 Fed. Rep. 866, which is chiefly relied upon as sustaining your Honor's holding, was decided by the same judge who subsequently decided the 64 Fed. Reporter case, and is in effect overruled by his opinion in the latter case, as well as by the Supreme Court of the United States in Smythe *v.* Ames. In the Day case, however, the bill was filed before the schedule of rates had gone into effect, and there was therefore no period of operation subsequent to the fixing of the rates before the bill was filed. The same was true in the 64 Federal Reporter case, but the investigation was nevertheless permitted at the discretion of the defendants. In the case at bar there had been nearly nine months of operation of this plant after the passage of the ordinance before the bill was filed and more than a year before the order of reference was made, which included an item of the report upon the period subsequent to the passage of the act, and more than two years

had elapsed before the proof was closed and the Master's Report made and filed, and the evidence as before stated, taken for the year subsequent to the passage of the ordinance, was taken under the special direction of your Honor after hearing a discussion of the question and upon the authority of Smythe *v.* Ames, *supra.*

Your Honor's suggestion that the fact that a cheaper rate or growth of population may have increased the demand —
333 and consumption of water and thereby the income or revenues of the plaintiff company, cannot be looked to, is not in accord with the above cited cases, nor with the case of Railroad *vs.* Wellman, 143 United States 339, 36 Lawyers' Ed. 176, wherein it is said by Judge Brewer:

"Must it be declared as matter of law that a reduction of rates "necessarily diminishes income. May it not be possible, indeed, "does not all experiences suggest the probability that a reduction "of rates will increase the amount of business and therefore the "earnings? At any rate, must the Court assume that it has no such "effect and ignoring all other considerations, hold as matter of law "that a reduction of rates necessarily diminishes earnings?

In this case, there was proof to show that there was increase of population, and that the reduction of rates would tend to increase consumption of water. It is not, petitioner submits, the date of the passage of the ordinance that necessarily fixes the time of inquiry. That date should probably fix, in a measure at least, the date of inquiry as to the value of the plant, but the cases hold that the inquiry should be as to the value of property &c. at the time it *is being used* by it for the convenience of the public.

This does not mean the date of the ordinance, but some period a year more or less, while the property is being operated subsequent to the date of the ordinance. The year before the date of the ordinance, which is selected for the ascertainment of income and operating expenses, is no more of, or at the date of the ordinance than the year afterwards. As to income and operating expenses, the law unquestionably does not confirm the investigation to the exact date of the ordinance, but to some time, even before or after or both,
334 when the plant is in operation.

It is a misconception of Plaintiff's contention in this case to state it as requiring the plaintiff company to conform to the ordinance during any period subsequent to its passage. Petitioner's contention is that the results of its operations under its own rates after the passage of the ordinance, is more satisfactory evidence of what would occur under the reduced rates than the operation of its plant under its own rates for the year prior to the passage of the ordinance.

In this case, there is no speculative question presented upon petitioner's theory. It proposes that the action of the Court shall be based upon the actual receipts and expenditures of this company under its own ordinance subsequent to the passage of the ordinance, with such other pertinent considerations as may bear upon the question. It is a speculative question to attempt to determine from the

operations of the proceeding year what would be realized for year subsequent to the passage of the ordinance, as contended for by the plaintiff company. There is no need to enter into such field of speculation, when there is proof in the record of the exact receipts and expenditures of the plaintiff company under its own rates. That is better evidence than any inference that can be drawn from its receipts and expenditures in operating under its own rates for a preceeding year.

Petitioner does not insist that the company should have submitted to the company's rates in order to have determined the question, but that not having submitted, the Court should look to its actual receipts under its own ordinance for the period after its passage as a convincing circumstances in the case, and especially so as the bill was not filed until nine months after the ordinance went into effect.

Third. Under the fourth section of the opinion, Petitioner submits that the Court erred in the following statement:

335 "A third proposition which may be announced in the form "of general statement, is that in this proceeding the Court "cannot consider or determine whether or not the water Company "is operating a plant which contains defects which ought to be "remedied, such as water mains of insufficient weight and water "carrying capacity, and defects urged against what is called the "'Intake Tower' on account of the unsanitary conditions growing "out of the particular place where the water In-Take is situated. "The Court is not permitted in a proceeding like this, indirectly "and col-aterally, to investigate and determine questions of that "kind, and certainly the Court is without power to punish the "plaintiff, indirectly and collaterally by deducting from the other-"wise established value of its property, an amount supposed to "represent the defects referred to, and lower what would otherwise "be a fair income to the Company by an amount supposed to repre-"sent the per cent., on deductions thus made for defects, etc.

This petitioner submits is erroneous. The question, or one of the questions for the Court's determination, is the fair or real value of the property at the time it is being used for the public benefit. The defects go to the question of value just as much as the defects in a horse, or a house, or a wagon, or any other piece of property goes to its value. The suggested defects affect value in the same manner, though perhaps in a different way, and to a different extent as the fact that the property is old or second-handed. The fact that the company uses the property for the purpose for which they

336 construct it, does not in any material degree determine its value. They may use very old and entirely antiquated pumps; they may use, as the proof shows they do in this case, gas pipes instead of water pipes, but the fact of such use does not obviate the other fact that such property is not as good or as valuable as first class new material of recent construction would be, nor is it an answer to say that the City has a remedy for the correcting of such defects. The City has a right to have the property that the Company actually has placed at its fair actual value in its then condition, taking into consideration its defects, unsuitableness, etc.

Fourth. Petitioner insists and states that the Court's holding found under Section 6 of the opinion with reference to services put in by consumers, and in reference to blind services, is erroneous and prejudicial to it. The Master, whose report has been confirmed by Your Honor, allows, as part of the value of this plant upon which reasonable return is demanded by the plaintiff Company, $33,000.00 on account of services that were paid for by Water consumers. He, however, disallowed for blind services. The Court mistakes petitioner's contention in assuming that it does not deny that these services put in by consumers do not belong to the Company, and that the fact is conceded by petitioner that they do belong to the Company. Both in the printed brief presented to your Honor, and in the oral argument before your Honor, it was contended, as counsel distinctly remembers, and which has doubtless escaped the attention or memory of the Court, that these services did not belong to the Company. In the printed brief attention is called to the fact that services put in at the expense of consumers had been entirely omitted by both Ludlow and Wingfield in their estimates in the Chattanooga case, and it is there stated that this estimate is estimated and unfounded to the extend of at least $35,000.00 to $40,000.00.

Brief on facts, pp. 64-66.

337 Wheeler & Kimball excluded the cost of services put in by consumers from their estimate of the fair construction cost of this plant, as Mr. Wheeler himself testifies, and as shown by the estimate of fair construction cost embodied in his deposition, thereby admitting in the most solemn manner that they found no part of the plant.

Wm. Wheeler's Dep'n pp. 21-100, and 272-3.

The clause of the contract under which the Company may require water consumers to put in the services at their own cost, does not make them a part of the Company's property.

The Court is likewise in error in assuming that the services originally put in by consumers, had been to any material extent renewed. Many of them were of comparatively recent construction, and none of them had served as much as half of the life of such pipe.

As regards blind services, the Court erred in holding that they were a part of the plant in use for the benefit of the public. They are not in use, and it is not remembered that there is any requirement, by contract or ordinance, compelling the Company to put in such Blind Services. It is done by the Company for its convenience and in expectation of obtaining consumers to use it, and constitutes no part of the use of the plant.

Fifth. Petitioner insists and avers that the Court in said section 6 errs in its disposition of the fact or circumstance that the Water Company allows a 5 per cent. discount on its bills when paid within a certain time after due. It is true that this fact was relied upon, as the Court states, as a concession that its rates could be made at least 5 per cent. lower without incurring the charge of being confiscatory, but this was not the only aspect in which this fact was relied upon

by petitioner. The City ordinance made a practically hori-
338 zontal cut of about 20 per cent. on the existing rates of the Water Company. The City ordinance is on trial and is unconstitutional if it will not permit the Company to fix a rate that will yield a fair return, but is valid if it will permit such a rate. The question is, therefore, what the ordinance will permit. The ordinance requires no discount to be made. The Company's rates that are lowered by this horizontal cut, makes that 5 per cent. allowance. Now it is insisted by petitioner that by reason of the ordinance omitting any requirement of this discount of 5 per cent., that the rates of the City ordinance reduce the rates of the Water Com-any, not upon the basis of its normal rate which included the discount, but upon the basis of its actual rate which would be its normal rate less the 5 per cent. discount, and therefore reduce the rate instead of about 20 per cent. only about 15 per cent. In other words the Water Company has the power to charge up to the full limit of the city ordinance without any discount. It actually charges 5 per cent. less than the normal rates fixed by its own schedule which are made the basis of reduction by the City ordinance. This was the chief use made of this 5 per cent. or intended to be made by the petitioner.

Sixth. Petitioner insists and avers that the Court's action and holding on the subject of depreciation, both complete and incomplete, and his disposition of that matter is erroneous and prejudicial to it. This matter is likewise disposed of in section 6 of the opinion, which is not paged the only use made or insisted upon by petitioner as to complete depreciation, was to reduce by the amount of that depreciation Wheeler & Parks' estimate of the fair constructi- value of the plant. They had in that estimate embodied, as shown
by Mr. Wheeler himself $95,987.04, which was based on
339 machinery and other materials and property that had entirely gone out of the plant at the date of this ordinance. as to incomplete depreciation, the only use made of this fact was to indicate the difference between the value of the new plant as found by the Master (his estimate being based upon the values fixed by new material in the replacement cost of Wingfield) and the existing old plant at the date of the passage of the ordinance, Mr. Wheeler fixed the difference, by a careful estimate, at $77,726.51. The existing plant according to Mr. Wheeler was worth that much less than the new plant, the value of which was reported by the Master. The Court agrees with petitioner's contention that there is manifestly a difference between the value of an absolutely new plant and a plant that has been in use for many years although Mr. Wingfield had stated that in his opinion there was no difference.

As regards the Court's allowance of complete depreciation as a part of the value of the plant, petitioner insists that his action is clearly erroneous. It is the plant and the physical plant that is to — valued. This completed depreciation has no existence whatever in the plant that the Court and the Master undertakes to value. It has gone wholly *gone* out of the plant. That is what makes it completed depreciation. Whether depreciation, if unpaid, is a debt

against the Company or a debt against the City or people, is another question. In regard to its allowance at all, we have this to say; This company has had absolute control without the slightest interference by the City or its people, in the fixing of its rates, up to about 1890. If it has not fixed those rates so as to give a fair return, it is its own fault. It is not believable that it did not fix its
340 rates high enough to realize all that it was entitled to. Moreover, this depreciation or sinking fund is a matter to be contributed annually by the consumers of the Company for each particular year, and the Water Company that fails to exact it from one's consumers, or one generation has no right to make it the basis of exacting excessive rates from consumers of another year or another generation.

The Court does petitioner an injustice inadvertently and without fault, for his attention was not directed to the facts in stating that the Water Company had not realized in former years a sufficient amount to pay this depreciation fund. There is a statement of the Treasurer by which he undertakes to show that only about $19,000.00 of surplus has been realized, but upon petitioner's seeking to inquire into the accounts of years prior to 1899, he was refused the liberty to do so upon the objection of Counsel for plaintiff Company, and the statement of income for the years preceding 1899 was ruled out and all inquiry in regard to the same was denied to the petitioner on the exception of the plaintiff by the ruling of the Master.

Record, pp. 826-1828.

The Court's attention was not called to this matter. Of course this *ex parte* statement of the Treasurer as to what is shown by his books, and which was subsequently excluded and all inquiry denied to petitioner in regard to the same, should not be considered to petitioner's prejudice.

There was no abandonment of incomplete depreciation by this petitioner. It assumed that the Clerk only intended to say that it had been abandoned as a claim to be allowed the plaintiff Company by it, and if his language is to, be construed to have a differ-
341 ent meaning, petitioner desires to have him amend or explain the statement and will offer his affidavit for that purpose. Besides, it is not essential to rescue rates from the category of being confiscatory that they should provide for depreciation at all.

San Diego Land & Town Co. *v.* Jasper, 174 U. S. 739, 43 Lawyers' Edition, 1154.

And the failure to demand it at any time is a waiver of the right to demand it later.

And again it does not lie in the mouth of the plaintiff Company to state that it has not in the past realized a sufficient sum to meet this depreciation fund, when it appears in this record that it expended from $25,000.00 to $35,000.00 for purposes that its Treasurer could not, or would not explain or avow, which sums were kept in what is called a Franchise Account, or the most of them kept in

that account. Besides it appears in this record that this Company paid nothing on its more then $600,000.00 of common stock, and that by a contract made by its officers with itself it paid more than $500,000.00 under a contract with its officers for the construction of property in excess of its cost as estimated by Kimball themselves.

This Company has built up a so called indebtedness of nearly one million and a half of dollars and has to show for it a property that the Master estimates the value of when new at only a little over $600,000.00.

Seventh. Petitioner avers and states further that while the Court states correctly that the income under the ordinance as fixed and found by the Master would pay only 3.35 per cent. annually on the value of the plant as found by the Master, The Court erred
342 in its conclusion that this was the maximum rate that this Company's income, under the ordinance would pay upon the fair value of the plant, and that therefore the ordinance rates failed to give the plaintiff company a fair return. This holding is likewise found under section 6 of the opinion. The Court had correctly stated in a preceding paragraph of the opinion that it was not material to separate the plant, or its income, or its operating expenses between inside and outside City. That separation was made in the Chattanooga case, but was used for the purpose justly of requiring part of the plant outside the City to bear a larger percentage of operating expenses than was given to it of income. The error of adopting this per cent. will appear from the following statements of facts. It was based upon a division of the plant operating expenses and income and a most inequitable division of these matters between the plant inside and outside the City. The Master in his report has estimated the value of the plant as new at $608,427.95 (Report, p. 18). He had assigned to the City proper of this value, $570,887.95, or a little over 93 per cent. of the whole, and to outside the City the valuation of $37,540.00, or nearly 7 per cent. of the whole (Report, p. 27). He found the entire operating expenses for the year 1900-1901 to be $34,750.91 and assigns of this amount $32,809.98 to the City proper, or 94.6 per cent.:—and to outside the city, $1,940.93, or 5.4 per cent. thereof.

He finds the income to be $88,481.39, and assigns of this amount to the City proper, $78,148.31, or 88.32 per cent. of this amount, and to outside the City $10,333.08, or 11.68 per cent.

See brief on Fact, pp. 138-9.

Thus it appears that the contrary to the rule adopted in
343 the Chattanooga case outside the City gets much larger per cent. of income—more than double—than it is required to bear of operating expenses. Now, it is this $78,148.31, the amount of income assigned to the City proper that is made the basis of this calculation, under which only 3.35 per cent. is found by the Special Master to be realized as the return by this Company. Moreover the value of the plant is fixed at over $600,000.00 and includes in that estimate $60,000.00 for "going concern," $33,000.00 for services put in by consumers, and is the estimate of a new plant, when the

existing plant, as Mr. Wheeler proves, had undergone depreciation to the extent of more than $77,000.00.

The income as fixed by the clerk by this calculation does not include the sum of about $208.00 that were carried out at the end of this year in excess of what was brought in, and does not include income from Taps and Supplies. Now disregarding the divisions between City proper and outside City, as the Court has properly decided, we have, on the Clerk's basis, the following result: taking the Clerk's valuation of the plant, his allowance of operating expenses and his estimate of income, and deducting from the Clerk's inadequate estimate of income $88,481.00, the operating expenses as fixed by the Clerk $34,750.00, leaves $54,730.00 deducting 2% of value of plant for depreciation fund, to-wit: $12,160.00 from the above balance, leaves $42,570.00 after paying operating expenses and providing for depreciation fund. Giving the Plaintiff Company 4% upon the valued plant as fixed by the clerk, to-wit: $24,320.00, leaves the sum of $18,250.00 that under its own rates, taking the clerk's estimate of value of plant, amount of operating ex-
344 pense, the amount of income that this Company received during the year 1900-1901 in excess of what it is entitled to if 4 per cent., with 2 per cent. additional for depreciation is to be treated as a fair income, and instead of getting as reported by the clerk 3.35 per cent. during this year it in fact got on his valuation in addition to operating expenses and 2% depreciation fund, 7%.

Now in view of this fact, the horizontal reduction of about 20 per cent. amounting to less than $18,250.00 was entirely admissable even for this year, and upon the Clerk's *own* figures. But it must be borne in mind that the value of this plant as indicated by its assessment for taxation was only $357,500.00 and that there are many considerations which should reduce materially the estimate by the clerk. It should be further borne in mind that the increase should be increased for this year by the items above stated, and it should be further borne in mind that while 4% may be lower than the rate of interest fixed by law, that it was the per cent. which it was stated in the Chattanooga case would have rescued those rates from the category of confiscatory rates, and was likewise stated to be sufficient in the Covington case. It should be borne in mind, too that in addition to this rate of interest, this Company gets its taxes, which are $2.60 on the one hundred, and its insurance on its property paid as operating expenses, and also gets 2 per cent. as a singing fund. These are advantages that the party who loans money does not enjoy, and compensates to some extent at least for the uncertainty of investments of this character. Lenders who pay taxes and insurances do not get as much as 4 per cent. as a rule. So that, for this year, and upon the Clerk's own figures, when the juggling in the division between income and operating expenses between
345 inside and outside City is eliminated, this company gets more than $18,000.00 in excess of fair return, and upon a proper adjustment of the plant and of the amount of income, the excess would considerably exceed this amount.

So that this ordinance, even is to be tested by the situation ex-

isting at its date, and by the income and operating expenses that accrued for the year prior to its date instead of the year after its date.

Eighth. Petitioner avers for the reasons stated in the companion petition, hereinbefore refer-ed to, that this ordinance must be tested, by what was earned in the year subsequent to its passage and that as shown in said petition. Its water rentals increased in that year more than $8,000.00 and its entire income more than $13,000.00 over that received during the year preceeding its passage, which we have just analyzed, and that its legitimate operating expenses were not materially increased, and that there was no such increase in the value of the property as would absorb or neutralize this difference in income.

Ninth. The premises considered, petitioner prays for leave of Court to file this petition for a re-hearing of this cause, and that such process as may be required by the rules of the Court shall be issued to compell the appearance of the plaintiff Water Company to answer the same; that a rehearing be granted for the causes herein stated, and that the decree of this Court heretofore entered, be revoked, and that such orders and references may be made as will effectuate such rehearing and result in a direct decree in this case.

Petitioner prays for general relief.

M. & A. OF THE CITY OF KNOXVILLE.

PICKLE & TURNER,
Sol's for Def't.

346 STATE OF TENNESSEE, *Knox County, ss:*

Personally appeared before the undersigned authority, G. W. Pickle, who states on his oath, that he is the attorney for the Petitioner, and that he has read said petition, and that the facts therein stated are true to the best of his knowledge, information and beleif.

G. W. PICKLE.

Sworn to and subscribed before me on this January 28, 1905.

W. T. KENNERLY,
Notary Public.

(Endorsements:) No. 1260. In Equity. Knoxville Water Company *vs.* M. & A. of Knoxville. Petition to Rehear. Filed Feb. 1st, 1905. J. T. Carter, Deputy Clerk.

EXHIBIT TO PETITION.

Statement Showing that even upon the Basis of the Clerk's Findings for the Year 1900-1901, the Income of the Water Company Afforded for that Year a Fair Return at the Ordinance Rates.

The Clerk's findings as to the entire plant are these:

347	1. Value of plant (Report p. 18)	$608,427.95
	2. Operating expenses (Report p. 30)	34,750.91
	3. Income water rates only (Report p. 27)	88,481.39
	4. Per cent. of Reduction of Rates by City Ordinance 22.88 pr. ct. (Report p. 28)	
	5. Rate of Depreciation 2% (Report p. 38).	

Calculation.

(*a*) Entire income from Water rates as found by clerk.	$88,481.39
(*b*) Deduct 22.88 per cent. as found by Clerk on Water Receipts, except as to Hydrant rental of $11,455.00—the latter not being reduced by the ordinance (Report p. 29)	17,623.63
Receipts at Ordinance Rate (Report p. 27)	$70,857.76
Deduct operating expenses as found by Clerk	34,750.91
Surplus after paying operating expenses	$36,106.84
Deduct 2 per cent. depreciation, 2 per cent. on $608,427.95	12,168.55
Balance	$23,938.29

This sum lacks only $398.82 of paying 4 per cent. on the Clerk's valuation of plant, and his finding as to income and operating expenses. It pays exactly 3.93 per cent. on his valuation of plant after deducting his finding of operating expenses and 2 per cent. for depreciation. Taxes and Insurance are paid as operating expenses.

The 3.35 per cent. referred to in the opinion is the per
348 cent. that is paid on the Clerk's valuation of the part of the plant outside the City, which is excessive, and after imposing on the City income nearly all operating expenses, and giving the City a grossly inadequate amount of income the Court has held this division improper.

II.

Statement Showing the Return Afforded the Water Company on the Basis of Ordinance Rates Adopting Conservative Valuation of Plant at Date of Ordinance and of Operating Expenses, and Taking into Consideration Entire Income of Plant for 1900-1901.

Conservative estimates are as follows:

1. Value of plant—not over	$50,000.00
2. Operating Expenses—not over	34,750.00
3. Income entire—water rates $88,481—39x—$208.79 (excess of accounts carried out at end of year x $878.75 (Taps) x $2,382.36 (Supplies) Total	91,951.29
Deduct reduction of 20 per cent. by ordinance on all water rates except hydrant rental $88,690.18—$11,455.00 equals $77,235.18, 20 per cent. equal to	15,447.36
Receipts on basis of Ordinance	$76,503.93
Deduct Operating expenses substantially as found by Clerk	34,750.00
Balance	$41,753.93
Deduct 2 per cent. for depreciation as found by Clerk—2 per cent. of $500,000.00	10,000.00
Balance	$31,753.93

This sum pays 4 per cent. on the value of the plant and leaves a balance of $11,753.93.

It pays 6 per cent. and leaves a balance of $1,753.93.

349 III.

Statement showing the return afforded the Water Company at the ordinance rates for the year 1901-1902, the first year after its passage, adopting substantially the Clerk's valuation of plant, operating expenses and —% for depreciation, and supplying income which is not found by Clerk for this year, but is found in the record.

Basis for this calculation is as follows:

1. Valuation of plant	$600,000.00
2. Operating expenses	34,750.00
3. Income (net) from water rates, only deducting abatements and rebates	96,461.00
4. Income, including taps and supplies $96,461.00 (Water rates) x $2,395.84 (taps) x $2,646.89 (supplies)	$101,503.73
5. Rate of reduction by ordinance 22.88% and 20% as claimed by both parties.	
6. Rate of depreciation 2 per cent.	

Calculations.

Income water rates only	$96,461.00
Deduct 20 per cent. as contended by defendant on all but hydrants for reduction by ordinance $96.461, $11,455.00	17,001.00
Receipts from water under ordinance on this basis	79,460.00
Again, deduct 22.88 per cent. as claimed by Water Company	18,371.00
Receipts under ordinance on this basis	78,090.00
Deduct Operating expenses from each of these balances	34,750.00
From $79,460.00 leaves	44,710.00
From $78,090.00 leaves	43,340.00
Deduct from each of these balances 2 per cent. for depreciation, 2 per cent. of $600,000	
From $44,710.00 leaves	32,710.00
From $43,340.00 leaves	31,340.00

Now 4 per cent. on value of plant at $600,000.00 is $24,000.00, and 6 per cent. is $30,000.00. In either case, giving 4 per cent or 6 per cent. as fair return, there is an excess on water receipts only.

But upon bases of entire income from all sources and as contended by defendant, the calculations are as follows::

Entire income (*supra*)	$101,503.73
Deduction of 20 per cent. on water rates, except hydrant rental	17,001.00
Receipts under ordinance for this year	$84,502.73
Deduct Operating Expenses—not over	34,750.00
Balance	$49,752.73
Deduct 2 per cent. depreciation on value of plant for this year not over $600,000.00	12,000.00
Balance	37,752.73

This sum pays 4 per cent. on $600,000.00 valuation of plant leaves excess of $13,752.73, or 6 per cent. on same valuation and leaves excess of $7,752.73. In any aspect of this case, this company receives a fair return, and more under the ordinance rates.

It thus appears that the Water Company during the first year of the operation of the ordinance—nearly nine months of which had elapsed when the bill in this case was filed—actually received under its excessive rates, in water rents alone $25,711.00 (being $18,371. (22.88) per cent. reduction by ordinance as above shown) and $7,340.00 (excess) over 4 per cent. return on a $600,000.00 valuation of its plant, and $19,711.00 (being $18,371.00 (22.88 per cent.) reduction and $1,340.00 (excess) over 6 per cent. on $600,000.00

valuation of its plant, and greatly increased amounts, when the entire income of the plant is taken into consideration.

These calculations involve no considerations of increase of
351 consumption from reduction of rates.

G. W. PICKLE,
Counsel for Def't.

(Endorsements:) Knoxville Water Company *vs.* M. & A. of Knoxville. Exhibit to Petition. Filed Feb. 1, 1905. J. T. Carter, Deputy Clerk.

352 In the Circuit Court of thr United States for the Northern Division of the Eastern District of Tennessee, at Knoxville.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

I, W. T. Kennerly, make oath in due form of law, that upon this date, I deliver to J. W. Caldwell, Esq., one of the Counsel for the plaintiff, copies of the accompanying petition to rehear the above styled case, and also the petition to re-refer and re-open the said case, as to the income of the said company and the reasonableness of the rates of the said ordinance herein attacked, as applied to the year subsequent to the passage of said ordinance.

This Feb. 1st, 1905.

W. T. KENNERLY.

Sworn to and subscribed before me, This Feb. 1st, 1905.

M. F. CALDWELL,
Notary Public.

(Endorsements:) No. 1260. Knoxville Water Company *vs.* M. & Alderman of Knoxville. Affidavit as to copy of Petitions to rehear etc. Filed Feb. 1st, 1905. J. T. Carter, Deputy Clerk.

353 KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Answer to the Knoxville Water Company to the Petition to Rehear Filed in this Cause.

The plaintiff has been served with copies of two petitions to rehear, files by the defendant. One of them, which seems to have been prepared before the decree was entered in this case, will be hereinafter referred to as the first petition, and the other, which seems to have been prepared after the decree was entered, will be refer-ed to as the second petition.

The first petition in effect asked that the opinion of the Court be reversed and its decree set aside upon the alleged ground that the income of the Water Company for the year 1901-1902, the one subsequent to that by which the Master and the Court tested the ordinance of March 30, 1901 in so far as a mathematical test was proper, would support said ordinance or prevent it from being confiscatory. This allegation is denied as are all the allegations of the two petitions to rehear upon that subject. On the third page of the first petition defendant undertakes to set out a table of income from the plaintiff's plant for the fiscal year 1901-1902, and alleges that the income for this year exceeds that of the preceeding year by more than $8,000.00,
354 and that the toatl income would exceed that upon which the Court's opinion and decree is based by more than $13,000.00, admitting, however, that this last amount embrassed $1,065.00 balance of accounts uncollected, a matter upon which the Master has acted and about which there should be no further dispute.

Said first petition then goes into the subjects of operating expenses and income, but does not take into consideration the increased value of the plant on account of the additional construction made during the year 1901-1902, and the large increase in the value of material, and especially in the value of cast iron pipe.

It is clear that no pleading can be fair which does not take this additional construction and increase of value otherwise into consideration and that no court would allow a decree under any circumstances which did not make due allowance for the increased value of the plant thus created. Said first petition alleges that the value of the plant was fixed by the (clerk" at about $600,000.00 "when absolutely new." This statement is traversed. The Special Master did not fix the value of the plant as an absolutely new one, but as it existed at the date of the passage of the contested ordinance to the allegation that in this valuation which is arbitrarily and correctly attributed to the "clerk," there is the sum of $60,000.00 for "going concern," plaintiff says that it is true, and it believes and has contended all along upon the proof, that the amount allowed for "going concern" should be more than $100,000.00.

It is true that the Master and Your Honor allow approximately the amounts stated in said first petition for "seVvices" and the
355 fact that claims for the two items last named were not made in the Chattanooga case, does not prove that they would not have been allowed if they had — properly made and proved in that case as they were in this one.

The allegation of the said first petition that "the services were not claimed or computed as a part of the plant by Wheeler and Kimball in their statements in this case," it is not correct in its entirety, because it will be seen that the analysis of Wm. Wheeler and Kimball fixes the fair construction cost of that part of these services which have been constructed by the Company to March 31st, 1901, at $7,145.00 but the important fact, and one which should have been well known to the Defendant is that Wheeler & Kimball limited their estimate of the value of services in their analysis to those that had actually been put in up to March 31st, 1901, by the

Company because their analysis was one of construction cost to the Company to that date and a fair treatment of this point requires the admission by defendant that such is the effect of their testimony.

Deposition Wm. Wheeler, pp. 3228-3229.

Plaintiff declines to follow the defendant into calculations based upon defendant's illogical method of treatment of assumed figures for the year 1901-1902. If Your Honor should decide that the claim now made by defendant is admissable, then it will be necessary to send the case again to the Master, and it cannot be proper to burden Your Honor with calculations of the kind attempted by the defendant.

Said first petition insists "that under the law defendant is entitled to have the court consider, act upon, and declare the constitutionality or unconstitutionality of said ordinance upon the facts shown to have existed during the first year *and ever since*
356 *its passage.*" Your Honor has held directly to the contrary, affirming the finding of the Master.

The claim that the defendant is entitled to have the court look to the facts and figures for every year since the passage of the ordinance is a logical conclusion from the erroneous premises and assumption that the court can look to the year after the passage of the ordinance. No reason is seen why the ordinance might not be tested as well by the 10th, as the first year after its passage, and this rule would permit legislative bodies to pass what might be called statutes in remainder, invalid when passed but becomming effective at any time in the near or remote future upon the happening of certain contingencies.

To support its contention upon the point under consideration defendant alleges that it relies upon Ames *v.* The Union Pacific Railway Company, 64 Fed. Rep. 165, 189 and Smythe *v.* Ames, 169 U. S. 466-550.

The two cases are the same, having been decided under the first name by the Circuit Court, and under the second name upon appeal by the Supreme Court. That case is so clearly distinguished from the present one that plaintiff regards it as an extraordinary fact that defendant should attempt to rely upon it. The quotation on the fifth page of the first petition is a correct one, and so is the quotation on page 6 thereof. But the defendant has nowhere called the attention of the Court to the fact that the Nebraska statute which was construed in the Ames case was so framed as to provide in terms for the modification from time to time by the proper tribunal of the rates allowed to be charged by different railroad companies. Under that statute there was a continuing commission charged with the supervision and the readjustment for good cause of rail-
357 road rates, etc. It was in the power of that commission to vary rates allowed to railroads according to the facts properly presented to it. An appeal was allowed to the Courts of the State from its decisions, and a railroad company had the right under the statute to apply to the Courts, upon its own initiative, for a revision of the rates fixed by the Commission. In other words the

statute was so constructed as to allow the changing of a railroad company from one class to another by the commission or by the Court. It was the purpose of the act to give the commission and the Courts power to make these changes without additional legislation. Presumably the statute is still in force, and if it be still in force it is undoubtedly competent for the commission or for the Court, as the case may be, to change at this date the rates permitted to be charged by any railroad company according to the equity of the case. The statements here made will be verified by an examination of pages 471, 474, inclusive of 169 U. S.

It is affirmed confidently that the contention that Smythe *v.* Ames sustains the claim now made by the defendant is not only unsound, but is without the color of reason to support it.

An examination of the Nebraska statute fully explains the last sentence from 64 Federal Reporter, quoted on page 5 of the first petition to rehear, to-wit:—

"So there should be entered as a proviso to the decrees that leave is reserved to the defendants at any time, as they are so advised, to move the Court for a reinvestigation of the question of the reasonableness of these rates."

That sentence merely approves the Nebraska statute and confirms the right of the railroad companies already guaranteed them by that statute.

Said first petition to rehear declares that

"It is clear under these authorities that a statute or ordi-
358 nance regulating rates though not enforcible at the time of its passage or upon conditions existing before its passage may become so when conditions have so far changed that a reasonable return may be had under the rates prescribed thereby, and that the Court will upon application investigate matters to determine this question which have arisen during a period subsequent not only to the passage of the ordinance but to the filing of the bill."

This is claimed in spite of the fact that the ordinance itself declares that it shall take effect from and after its passage, and specifically says it shall be then enforced. (See Ex. 8 to Bill.)

It is denied that such is the law of the case; it is denied that there is any authority whatever to support such a contention; and it is again denied that the cases referred to by the defendant are in any respect applicable to the case now before the Court.

Said first petition to rehear contains the following singularly worded sentence:

"The petitioner insists and contends that it is entitled under the authority of Railroad Company *v.* Tompkins, 176 U. S., 167-180, 44 Lawyers' Ed., 422-3, to a report of a competent and disinterested Master upon the essential facts existing during the year or longer period subsequent to the passage of said ordinance."

See 1st Petition, p. 8.

The case of Railroad Company *vs.* Tompkins was one in which the Circuit judge had done the work of a Special Master, and the Supreme Court simply said that a competent and disinterested Master

should have been appointed; but there is nothing in that case that in any respect supports that part of the above quotation which declares the defendant entitled to a report, "upon the essential facts existing during the year or longer period subsequent to the passage of said ordinance."

359 It is conceded that in every case a Master should be both competent and disinterested; but the plaintiff assumes that your Honor is sufficiently aware of the fact to make it unnecessary to allege it in a pleading.

Railroad *v.* Tompkins does approve the appointment of competent and disinterested masters, but as that action has already been taken in this case, it was not necessary to quote the case for that reason, and as no reference is made in that case to facts existing during the year or longer period subsequent to the passage of an ordinance or statute, plaintiff is unable to see any good purpose that the allegation last quoted above can accomplish.

Answering so much of the second petition to rehear as appears to be material, it is admitted that the decree in this cause enjoining the ordinance of March 30th, 1901, has been entered, and that your Honor has declined to consider the situation and facts existing during plaintiff's fiscal year 1901-1902.

The second paragraph of the second petition alleges the incorrectness of the holding of the Court to the effect that the validity of the ordinance must be determined from the situation as it was at the time of the passage of the ordinance. This question was fully argued, and after long consideration your Honor formulated your opinion as it now appears in this record. The plaintiff will not assume that your Honor desires any further argument upon the question, believing as it does that the proposition announced in the opinion is absolutely sound, and well settled upon authority including the case of Day *v.* Railroad 35 Federal Reporter, 866, referred to by the defendant.

The defendant relies, apparently in many instances upon the Chattanooga case, and in the particular matter under con-
360 sideration refers to the year adopted in that case in testing the validity of the ordinance.

If it is proper to consider the Chattanooga case, or if your Honor thinks the point made here by defendant worthy of examination, a reference to the record and to the opinion *to* the Master in the Chattanooga case will disclose that no question was made on this point by Counsel and there was no reason why the Court should act for Counsel or pass upon issues not raised.

It is alleged in said second petition to rehear, that the case of Day *vs.* Railroad Company, 35 Federal Reporter, 866, above referred to, was (in effect) overruled in the Ames case; whereas, as we have already explained above, the questions involved and the statutes construes in the two cases are so widely different that a very slight investigation will show that the decision in the Ames case has no bearing whatever upon that in the *Day* case.

In the second petition as in the first, the defendant is seeking to have your Honor solve this difficult problem without having before

you all the essential elements of it, making strong assertions in regard to income and expenditures and omitting all references to increase- value on account of additional construction and advance — the price of material.

Defendant now affirms that it "does not insist that the company should have submitted to the City's rates in order to have determine the question, but that not having submitted the Court should look to its actual receipts under its own ordinance for the period after its passage, as a convincing circumstance in the case."

As plaintiff has already said repeatedly, the assumption here that its income in 1901-1902 was sufficient to validate the Birdsong ordinance, is wholly gratuitous and unfounded, and the propo-
361 sition quoted is merely another form for the claim that a City Counsel may enact what we have described as legislation in remainder which may or may not become effective according to the occurrance of the failure of a possible state of facts the change of form for presenting the contention does not change the question. No Court ever has *ever* validated or ever will validate an invalid ordinance. That is the function of the law making power, and of none other.

In the third paragraph of its second petition, defendant disapproves that part of the Court's opinion which holds that alleged defects such as insufficient weight of pipes and the unsanitary conditions about the Intake tower are not to be considered in this cause. It has seen- to the plaintiff from the first that none of the contentions of defendant is more unreasonable than the one which it has made upon this point. Without citing the record or going into an argument, we are content to rely upon the declaration made by your Honor that we are entitled to the fair value of our plant as it now stands. If it were necessary to cite the record, we could show that the intake tower was put where it now stands as the necessary result of a contract with the City and remains there on account of continued obstruction by the City of the right of the water company to manage its own affairs.

It further appears from the last deposition of Wm. Wheeler that measures have been taken to correct the alleged pollution of the river above the intake tower.

In the fourth paragraph of its second petition, defendant renews its argument many times made that the plaintiff is not entitled to the allowance for services made by the Master, and reverts
362 to the claim made in its first petition that Wheeler & Kimball excluded services.

It further avers that the Court is in error in assuming that the services originally put in by consumers had been "to any material extent renewed,) whereas Wm. Wheeler in his deposition makes the uncontradicted statement that "as a matter of fact very many, perhaps a large majority or nearly all of these original*ly* services laid in that manner, have since been renewed by the Company and at its sole expense."

Deposition Wm. Wheeler pp. 3219, 3220.
Plaintiff's brief page 225.

Defendant likewise renews its wholly unreasonable objection to blind services, although these involved an expense of about $4,000.00, which the plaintiff was compelled to incurr by the express terms of a city ordinance.

In the fifth paragraph of its second petition defendant combats the conclusion that the water Company should be allowed to discount its bills in order to secure prompt and efficient collection. We do not consider it worth while to say anything further upon this point.

In the sixth paragraph of its second amended petition, defendant restates its argument upon the subject of depreciation. This question as your Honor has stated in your opinion has been argued at great length and in all its phrases by both sides. The plaintiff has nothing new to submit, and certainly the defendant has submitted nothing new in its petitions.

The allegation of the second petition to the effect that the defendant would suffer an injustice in the statement made by the Court that the Water Company had not realized in former years a sufficient amount to pay this depreciation fund, is denied as totally in-
363 correct. The effect given by your Honor to the statement of Elbert Wheeler is correct. This point is fully covered by the brief of plaintiff heretofore submitted in part "V" beginning on page 82. The seventh paragraph of the second petition to rehear contest to correctness too the holding in the opinion of the Court in regard to the per cent. that plaintiff would have earned under the ordinance of March 30, 1901, this is a matter of calculation which the plaintiff does not deem it necessary to consider further.

The remaining allegations of the seventh paragraph are not regarded as material.

The eighth paragraph of the second petition renews the contention so frequently made in these petitions and elsewhere that the ordinance should not be tested as of the date of its passage, and plaintiff does not regard it as necessary or important to offer any further argument or suggestion upon this point.

The highest valuation of the plant in the paper filed as "Exhibit A," to the two petitions is $608,000.00, while the "conservative estimate" assumed therein is $500,000.00. For the year 1901-2, the valuation of "Exhibit A" is $600,000. nothing being said of the large additions to the plant in that year, amounting, according to the analysis method of William Wheeler to more than $73,000.00.

Dep. William Wheeler, p. 506.

Neither is any account taken of the great increase in the cost of the largest item in the plant, to wit: the cast iron pipe. The diagram between pages 3076 and 3077 of Wingfield's deposition shows that the price of pipe rose steadily from March, 1901, to March 1902, the increase amounting probably to six dollars a ton.

These statements will show how entirely without value are the arbitrary calculations of defendant in "Exhibit A," and in
364 the two petitions in regard to differences between the years 1900-1901 and 1901-1902, and are sufficient we think to show the Court that defendant is in error in all its statements and

arguments on this point. Moreover, the multiplication of calculation and of tables of figures even upon a fair and correct basis would not assist the Court, as your Honor has already declared that you are not stating an account, but deciding the case upon its b-oard and real merits, which we submit is according both to reason and precedent.

And now having fully answered, plaintiff prays that it may be hence dismissed with its reasonable costs.

J. W. CALDWELL.
SHIELDS, CATES & MOUNTCASTLE.

EASTERN DISTRICT OF TENNESSEE:

R. E. L. Mountcastle att'y of the Knoxville Water Company, makes oath that the statements made in the foregoing answer as of his own knowledge are true, and those made as upon information he believes to be true.

R. E. L. MOUNTCASTLE.

Sworn to and subscribed before me, at Knoxville, Tennessee, this 6th day of February, 1905.

[SEAL.] W. K. ANDERSON,
Notary Public.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company *vs.* Mayor & Alderman of Knoxville. Answer of Complt. to Petition to rehear. Filed, Feb. 6, 1905. J. T. Carter, Deputy Clerk.

365 No. 1260. Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

This cause is continued and held over to the next (March term 1905), for final disposition and for such decrees orders, motions etc. as may be necessary for that purpose.

(Endorsements:) No. 1260. Knoxville Water Company *v.* M. & A. of Knoxville. Ent'd Journal S, p. 38. Filed 4 day of March, 1905. J. T. Carter, Deputy Clerk.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Henry O. Ewing, Special Master in this cause, moves the Court for an allowance of compensation.

(Endorsements:) No. 1260. In the Circuit Court at Knoxville. Knoxville Water Company *vs.* M. & A. of Knoxville. Motion of Special Master for allowance. Filed March 6, 1905. J. T. Carter, Deputy Clerk.

366 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

THE KNOXVILLE WATER COMPANY
vs.
THE CITY OF KNOXVILLE.

Petition on Behalf of Defendant.

Your Petitioner, the Mayor & Alderman of the City of Knoxville, respectfull*t* shows to the Court, that heretofore and recently, your honor has handed down an opinion, upon which a decree was based and entered, granting to the compl-inant the relief sought by the bill, and enjoining, as unconstitutional and void, the ordinance of the defendant of date the 30th of March, 1901, undertaking to regulate the water rates of the plaintiff. Said opinion and decree are based entirely upon the valuation of the plaintiff's plant as of the date of said ordinance and upon the income realized from the operations of plaintiff's plant during the fiscal year 1900-1901, the year immediately preceding the passage of said ordinance.

The Court has found and declared in its said opinion and decree that the ordinance is unconstitutional and void, upon this basis, declining thus far to look to the income and expenses of operating said plant for the fiscal year, or any other period immediately subsequent to the date of said ordinance.

Your petitioner comes now and represents to your honor that the situation had so changed from that existing during the fiscal year 1900-1901, that during the year 1901-1902 a greatly increased revenue was realized from the operation of the plaintiff com-
367 pany's plant, and its expenses of operation not materially increased, and that during said period, and ever since that date, the income of said plant has been amply sufficient to yield a sum sufficient to pay:

First. All operating expenses, and

Second. A depreciation fund of 2 per cent. on the value of the plant, and more than 4 per cent. on the fair value of the plant during the period subsequent to the passage of said ordinance, and especially during the year 1901-1902 immediately subsequent to its passage.

The Master declined to report upon this year, stating that it was not covered by the order of reference, to which he says there was no objection, and further states that proof was not taken upon the operations of this year. In these statements, the Master is not borne

out by the record and their correctness is challenged by your petitioner. It avers that the proof was confined to the years 1899-1900, 1900-1901, 1901-1902 and that the proof on these three years was fully developed under the directions of the Master, and that the order of reference was broad enough to cover the same, and that defendant especially asked for additional items of reference covering this point, which were filed under the order of the Court.

Your petitioner avers and insists that the income or revenues of said company were not only sufficient—as actually realized by it and shown by the proof in this record for the year 1901-1902—for the purpose aforesaid, but that it realized in addition a sum equal to more than twenty (20%) per cent. of its gross revenue, to which it was not entitled by law. In support of this statement, petitioner avers and shows the following facts, to-wit: that the income
368 of the plaintiff company for said year 1901-1902 was as follows:

Net water Rentals, after deducting abatements and rebates	$96,517.25
(Dep. F. C. Kimball Rec. 3318 (3342-3343) (Dep. W. M. Nixon Rec. p. 1828, 1928)	
Income on taps.....	2,395.84
(Dep. W. M. Nixon Rec. 1828) (Dep. F. C. Kimball 3318, 3295, 3296)	
Income from supplies.....	2,646.89
(Same references. See also Def't Brief on the facts pages 120-121-156)	
which gives income for the plaintiff's plant for the year 1901, 1902 of.....	$101,569.89

Petitioner shows the Court that the income for this year from water rates alone exceeds that of the preceeding year by more than $8000.00, and that the total income exceeds that upon which said Court's opinion and decree is based by more than $13,000.00. This amount of income for this year embraces, as it should, $1065.13, which was carried out in the accounts at the end of the year in excess of the amount brought in at the beginning of the year, and also the items from taps and supplies. These are all matters of income, and embraced as such on the books of the Company as shown by Mr. Kimball's deposition, Record pages 3295-3296.

Petitioner shows further that the legitimate operating expenses of said year are not in excess of the amount fixed by the Clerk for the proceeding year, to-wit: $34,750.00. The Petitioner's experts fixed the amount at about $30,000.00, and the plaintiff company claimed about $37,000.00, but in the latter amount was included a clearly illegal item of more than $1000.00 for expenses of Water rates Litigation, and some other clearly illegal items.

369 This amount includes Taxes and Insurance as part of the operating expenses of the plaintiff company. Deducting the

amount of operating expenses for this year as above fixed, leaves the net sum of $66,819.98 to be applied to a depreciation or sinking fund and to satisfy a fair return on the value of the plant. The value of the plant fixed substantially by the Clerk at about $600,000.00 when absolutely new, embraces $60,000.00 for "going concern" and $33,000.00 for services put in by consumers. Neither of these items were allowed as a part of the value of the plant in the "Chattanooga case." The services were not claimed or computed as a part of the plant by Wheeler and Kimball in their statements in this case.

William Wheeler's Dep. Rec. pp. 184, 270, and 273.

The value of this plant, as indicated by its assessment for taxation at $275,000.00 would be $357,500.00 and its value as a new plant was fixed by Nixon and Brown at less than $400,000.00, but taking the value as fixed by the Clerk approximately at $600,000.00 as a basis, and allowing 2 per cent. or $12,000.00 on that value for depreciation or sinking fund, and deducting that amount from the above net surplus of $66,819.98 leaves the sum of $54,819.98. Now, if 4 per cent., the amount fixed in the Chattanooga case is allowed as a fair return upon the value of the plant, to-wit: $24,000.00, there should be left a surplus of $30,819.98. And allowing 6 per cent. as a fair return, to-wit: $36,000.00, would leave a surplus of $20,-819.98. In either case, the over-plus exceeds or equals the reduction made by the City's ordinance. This is a clear demonstration from proof made by plaintiff's witness chiefly that the reduced rates would yield a fair return and even more than a fair return to the
370 plaintiff company for the first year of the operation of the ordinance, and this calculation is based upon a clearly excessive valuation of the plant, and upon a full allowance of operating expenses, including Taxes and Insurance.

It is perfectly apparent, that if a fair valuation of the plant is taken, and four, or even five per cent. is allowed as a fair return, that the water rates alone would yield as much as $20,000.00 or more in excess of the fair return to which the plaintiff company was entitled during this year.

In view of this situation, or change of situation subsequently to the passage of the ordinance, from that existing for the year prior thereto, but upon which the Court proceeded as a basis, your petitioner insists that under the law it is entitled to have the Court consider, act upon and declare the constitutionality or unconstitutionality of said ordinance upon the facts shown to have existed during the first year and ever since its passage, and in support of this contention it relies upon the following authorities:

Ames *vs.* Union Pac. Ry. Co. 64 Fed. Rep. 165-189.

Smythe *vs.* Ames 169 U. S. 466-550, Lawyer Ed. 819-850.

The opinion in the 64 Federal Reporter case was delivered by Judge Brewer. The bill was brought to enjoin the enforcement of railroad rates upon the ground of their unconstitutionality as not affording a sufficient return, and was filed before the rates took

effect. The bill was sustained, but the court closed the opinion with these words:

It may be said that even if furnishing no reasonable re*numer*ation to-day, the result might be different under an increase of business. That, of course, is possible, and it may be as the volume of business increases the time will come when the rates fixed by this House Roll 33 will be reasonable and just. So there should be
371 entered as a proviso to the decrees that leave is reserved to the defendants, at any time that they are so advised, to move the Court for a re-investigation of the question of the reasonableness of these rates."

This opinion was delivered in 1894 by the same judge who delivered the opinion in the Day case, 35 Federal Reporter, 866.

It is proper to state here that in the Day case as in the 64 Federal Reporter case, the bill was filed to enjoin the rates before they had gone into effect. In the case of Smythe *vs.* Ames, which is the same case as that reported in 64 Federal Reporter, the Supreme Court of the United States, through Judge Harlan, used the following language:

"We are unable to find from the record before us that the situa-
" tion in Nebraska had so changed in 1893 as to justify that being
" done in that year which was not safe or just to do in 1891: but
" it may be added that the conditions of business, so far as railroad
" corporations are concerned, have probably changed for the bet-
" ter since the decree below, and that the rates prescribed by the
" statute of 1893 may now afford all the compensation to which the
" railroad companies in Nebraska are entitled as between them and
" the public. In support perhaps of such a change of circumstances
" and the exceptional character of the litigation, the circuit court
" wisely provided in its final decree that the defendants, members
" of the Board of Transportation might, when the circumstances
" have changed so that the rates fixed in said Act of 1893 shall yield
" to the said companies reasonable compensation for the
372 " services aforesaid, apply to the Court by bill or otherwise,
" as they might be advised, for a further order on that be-
" half. In this provision of the final decree the said Board of Trans-
" portation, if so advised, can avail itself. In that event, if the
" Circuit Court finds that the present condition of business is such
" to admit of the application of the statute to the railroads in ques-
" tion without depriving them of just compensation, it will be its
" duty to discharge the injunction heretofore granted and make
" whatever order is necessary to remove any obstructions placed by
" the decrees in these cases in the way of the enforcement of the
" statute."

The decree of the Court below was affirmed by the Supreme Court as was this modification or provision.

It is clear under these authorities that a Statute or ordinance regulating rates, though not enforcible at the time of its passage or upon conditions existing before its passage, may become so when conditions have so far changed that a reasonable return may be had under the rates prescribed thereby, and that the Court will, upon

application, investigate matters to determine this question which *have* arisen during a period subsequent not only — the passage of the ordinance but to the filing of the bill. In the case at bar the ordinance had been in effect for two entire quarters of plaintiff's first fiscal year after its passage, and for nearly nine months after its passage before the bill was filed. The Court had a period of the actual operation of the ordinance for these two distinct quarters, and for nearly nine months of the results of operation of the ordinance before the bill was filed in this case, and hence this case more strongly invokes the action indicated in the above authorities
373 than in those cases.

This identical question was brought before the Court by motion or petition pending the taking of the evidence, and upon the authority of the case of Smythe *v.* Ames, above cited, and the Court declared from the bench that evidence was admissible touching the period subsequent to the passage of the ordinance, and upon this direction, the evidence for the year 1901-2 was taken and is found in this record.

It is proper to observe that the ordinance is not *ipso facto* unconstitutional, but that its unconstitutionality depends upon proof that it has been, and is, operating to confiscate the plaintiff's property. If it is not so, operating at this time, or has not been since its passage, it would not be unconstitutional, because it might have operated to have confiscated the plaintiff's property if it had been enacted a year earlier, when wholly different conditions existed.

The petitioner insists and contends that it is entitled under the authority of Railroad Co. *v.* Tompkins, 176 U. S. 167, 180, 44 Lawyers' Ed., 422-3, to a report of a competent and disinterested Master upon the essential facts existing during the year or longer period subsequent to the passage of said ordinance.

Premises considered petitioner prays for leave to file this petition in this cause, and that such process may issue thereon in accordance with the rules and practice of this Court as may be necessary to require the Complainant in this cause to answer the same.

It prays that on the hearing the original order of reference or item of reference submitted and filed by itself under leave of
374 the Court shall be revived and executed, or that a proper order of reference be now entered for that purpose and that the matters herein stated be referred to a competent and disinterested special Commissioner to report upon the same, and to show the value of said plant during the time it has been used under said ordinance for the benefit of the public, the amount of legitimate operating expenses incurred, and such other facts as are essential to an intelligent determination of this case in the aspects presented by this petition.

Petitioner prays for general relief.

M. & A. OF CITY OF KNOXVILLE,
By G. W. PICKLE.

PICKLE & TURNER,
Sols. for Def't.

STATE OF TENNESSEE, *Knox County, ss:*

Personally came G. W. Pickle, before the undersigned authority, and made oath in due form of law that he is the attorney for the petitioner in this case, and that he has read the foregoing petition and subscribed to the same, and that the facts therein stated are true to the best of his knowledge, information and belief.

Subscribed and sworn to before me this the 28th day of Jan'y, 1905.

W. T. KENNERLY,
Notary Public.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company. *vs.* M. & A. of Knoxville. Petition to Reopen and Re-refer case. Filed March 8, 1905. J. T. Carter, Deputy Clerk.

375 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
v.
MAYOR & ALDERMAN OF KNOXVILLE.

Statement of Henry O. Ewing, Special Master, in Support of His Motion for Compensation.

The record in this cause shows 3247 pages of typewritten proof. Under section 828 of the Revised Statutes a clerk is allowed 20 per cent. per folio for taking depositions, which in this case would have amounted to $2,272.90; this formerly taking and certifying the depositions.

The depositions show the Master present at Knoxville 92 days, extending over a period from Nov. 10, 1902, to Jan. 25, 1904, and this does not include many days the Master went to Knoxville to hear counsel as to when they could go on with the proof, etc.

During all that period the Master gave his time absolutely to this litigation, putting everything else aside and holding himself ready to meet any date, always seeking to hurry the matter to a conclusion.

No actual expense account has or will be rendered. Transient rates had to be paid at hotels in Knoxville, running from $3.00 to $3.50 per day, according to the character of the room.

The Master admits that he did not pay railroad fare, but the pass was certainly not provided by parties to this suit, and
376 the hardships of this great amount of traveling at all kinds of hours is certainly a consideration.

It is proper to suggest that earnest effort was made by the Court, assisted by the Master, who is also the Clerk of this Court, to have

the parties agree upon a Knoxville appointee for Special Master. They could not and the appointement went to a non-resident of necessity, so that it would be an injustice to treat the Master as a resident of Knoxville.

The contract or franchise between these parties, originally made, provided an option of purchase, and that the appraisers should be non-residents of Knoxville, indicating that even at that time it was for-seen that residents would be disqualified.

The suit was one of extreme bitterness, agreement on any question apparently being impossible, thus giving the Master the very unpleasant duty of deciding the minutest details, of when there should be a recess in the taking of proof, and when it would begin again.

The voluminous briefs prepared by counsel show plainer than words how extensive was the controversy and how many sharp issues were made.

This case went to the Master with the whole law of the case unsettled and bitterly contested at every stage of the prooftaking. It is submitted that such a responsibility is very unusual for a Master to have to assume, and had he not been reasonably successful in his conclusions of law, the proof must have been reopened at enormous expense and trouble.

377 The extent of the depositions, with the numerous exhibits, is such, that unless the report shows the Master to have over looked material facts, his very great labor must be admitted.

The Master submitted to counsel a proposition to settle his fee by agreement, with the reservation that the sum named was not to be conclusive if contested. In doing this the Master considered he had fixed a price less than fair compensation, but would have been satisfied if by its acceptance controversy had been avoided. Being now contested it is as though no negotiations had ever taken place.

Summing up the whole matter, if the $2,272.90 for merely taking proof be regarded as analagous, and to that be added such an actual expense as must be assumed in this case, because being at hotels away from home is far more expensive than the actual hotel bill, and stenographer's fees in working out the report, there would be something like $2,900.00. It will then remain to fix how much additional shall be allowed for the months of labor and ability required to prepare the report.

HENRY O. EWING,
Special Master.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company *vs.* M. & A. of Knoxville. Statement of Henry O. Ewing, Special Master in support of his Motion for Compensation. Filed March 13, 1905. J. T. Carter, Deputy Clerk.

378 No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Defendant's Exceptions to and Assignments of Error upon the Decrees, Rulings, and So Forth of the Court in this Cause.

In this cause, the defendnt, by its attorneys comes and makes, and enters exceptions to, and assigns errors upon the decrees, orders, rulings &c. of the Court in this cause, for the following reasons, to-wit:—

"I."

The Court erred in sustaining the bill, and in adjudging thereon that the defendant's ordinance of March 30th, 1901 was unconstitutional and void for any reason, and that the same should be perpetually enjoined, and defendant taxed with any part of the costs of this cause. Said ordinance was not in conflict with any contract between the plaintiff Company and the defendant, nor was the schedule of rates therein prescribed unreasonable or confiscatory, or for any other reason illegal, unconstitutional and void.

"II."

The Court erred in overruling the defendant's petition to re-hear. The several grounds therein set out, each and all afford good and sufficient reasons for the rehearing of this cause and dismissal of plaintiff's bill. The said grounds for a rehearing are fully set out, in the petition, which is hereby referred to, and incorporated herein and made part hereof in as full and ample a manner as
379 if specifically copied and set out herein.

"III."

The Court erred in dismissing defendant's petition to reopen and re-refer this cause to a Special Master to ascertain whether or not upon the facts existing with reference to the value of the plant, income and operating expenses subsequent to the passage of the ordinance were such as to show that the rates prescribed by said ordinance of March 30, 1901 would have afforded a fair return to the plaintiff company. These facts should have been looked to and reported upon under the original order of reference, but this was not done. This error is intensified by the fact that the bill was not filed until about nine months after the passage of this ordinance, and the further fact that the actual receipts, or earnings of this company, and its actual operating expenses under its own rates, were known and susceptible of exact proof of three years after the passage of the ordinance and are actually in proof for one and a half years after its passage.

"IV."

The Court erred in making any reference whatever of this cause to a Special Master upon the state of the record existing at the time of the original hearing. At this date, no proof had been taken, the averments of the bill were met and denied by the answer. Upon this state of the record, the Court should have dismissed the bill.

"V."

The Court erred in the matter and manner of the reference
380 made. The cause should have been heard upon all matters legitimately raised by the pleadings and proof, and after settling the controverted questions of law, the reference should have been of disputed questions of fact only. Instead the Court permitted the plaintiff to submit an order of reference containing eleven propositions, not more than one or two of which submit questions pertinent to the issues and inquiry in this cause. Upon defendant's exceptions and insistence upon a more accurate order of reference, the Court, by the twelfth clause of the order of reference in this case, permitted Counsel on either side to submit any additional written propositions that they desired, to be filed within ten days and made a part of the record, subjecting each party to the penalty of costs for any unnecessary or irrelevant inquiries submitted and made. The defendant submitted and filed a number of propositions persuant to this leave and action of the Court, which it insists presents the material questions of inquiry in this case. Subsequently the Court ordered that the Special Master should be the sole judge of what was material and what was immeterial in executing the reference. This, in fact and effect was a general reference of the whole case upon both law and evidence to the Special Master, without any direction from the Court upon the matters of law to guide his action. This was erroneous, and this error was intensified by the refusal of the Master to report upon any one of the propositions submitted by the defendant, or upon some of those submitted by the plaintiff.

"VI."

The Court erred in sustaining any of plaintiff's exceptions to the Master's report, expecially that with reference to the allowance of
381 b-ind services as a part of the value of the plant, and that with reference to depreciation of the plant.

"VII."

The Court erred in overruling the defendant's exceptions to the Master's report and these exceptions are referred to, and herein adopted, and made part hereof in as full and ample a manner as if the same were herein set out *verbatim,* the defendant excepts to and assigns error to each and all of these exceptions and the confirmation of the Special Master's report over the same.

"VIII."

The Court erred in its rulings and decision with reference to the valuation of the plaintiff Company's plant for purposes of this inquiry, especially in the following particulars, to-wit:—

(*a*) In adopting the Special Master's basis of the cost of reconstruction of an entirely new plant as the value of the existing plant, which had been in existence and use for more than twenty years:—

(*b*) In estimating or confirming the estimate of the Special Master as a part of the value of the plant upon which a fair return should be made to this company, such parts or incidents thereof as were contributed or donated to the Company by the public or the City, to-wit:—services put in at the cost of consumers, about $35,000.00 to $40,000.00 and "going concern" or good will $60,000.00 arising from the generous patronage of the company by the public;—

(*c*) In estimating or confirming the Special Master's estimate as part of the value of this plant, unused portions of the plant, such as blind services, etc.

(*d*) In estimating, or confirming the Special Master's estimate as part of the value of this plant of such things as did not
382 enter into the original construction of the plant, though they might be necessary in a reconstruction of the same at the present date, such as the restoration of pavement or macadam on the streets over the pipes. This amounts to some $15,000.00.

(*e.*) In adopting excessive estimates of value of such things as reservoir, pipe, machinery, etc. amounting to many thousand dollars. The allowance of the most of these matters, was a pure question of law, which the Court has failed to discuss specifically in its opinion, but has settled, by its general ruling confirming the Master's report in favor of the plaintiff company.

(*f.*) In refusing to consider as effecting value, serious defects in the construction of the plaintiff company's plant, such as the improper location of its intake tower, insufficient size of its pipe etc. The valuation adopted in this case is in consequence, very excessive; it exceeds the valuation indicated by its assessment for taxes, by the difference between its tax assessment of $275,000.00 and its valuation in this case of $608,000.00.

"IX."

The Court erred in its action and rulings with reference to, and in the ascertainment of the income of this plant for purposes of this case, in the several respects that follow;—to-wit:—

(*a*) In refusing to look to, or consider, or to have the Master report upon the actual income of this plant under its own rates for any period subsequent to the passage of defendant's ordinance of March
30, 1901. For one and a half years after the passage of this
383 ordinance, the income of *of* this plant was proved in this case by its officers and from its books. The Court refused to look to this income as affording any evidence touching the reasonableness of the reduction of rates made by the City ordinance. As the City ordinance makes a horizontal reduction of about 20% of the

company's rates, the court by reducing the actual receipts of this company, after the passage of the ordinance by 20% could have ascertained with almost mathematical certainty, what would have been the plaintiff company's income under the city's ordinance. Instead, the Court erroneously had the Special Master to report upon the income of the proceeding year only, and speculated from that standpoint as to what would have been the income for the next year, and what would probably have been realized under the ordinance, The income of the year succeeding the passage of the ordinance exceeded that of the proceeding year by about $13,000.00, with practically no increase in operating expenses. This is palpable error and contrary to the rule adopted in the Chattanooga case.

(*b.*) In failing to charge the plaintiff company with the full amount of its income, even for the year 1900-1901, prior to the passage of the ordinance, which alone was reported upon. The income reported by the Master and adopted by the Court for its action was $88,481.39. This was erroneous and to- small by reason of the omission of the following items, to-wit:—

About $208.00 excess of accounts carried out at the end of the year over the amount of accounts carried in at the beginning of the year; And about $2300.00 or $2400.00 for taps and supplies which were like wise income accounts.

384 It was error for the Court to refuse to adopt, as a basis for its action, the entire earnings and income of this plant, not only from water receipts but from all other sources during the year.

(*c*) In refusing to take into consideration, for any purpose whatever the fact or proposition that a reduction of rates is calculated to increase in some measure at least the business and possibly the income of the company. There was not only a presumption of that character in this case, but actual proof that such would have been the fact. It was error to disregard this circumstance.

(*d.*) In adopting the Master's division of income between City and out side City, while at the same time holding that such division was immaterial. The Court adopts the general result obtained through this unnecessary division, though not approving the principle of making such division. In other words, the 3.35 per cent return, which is calculated by the Clerk and adopted by the court as the return that could be realized under the City ordinance, is the result of a calculation made by the clerk, in which he assigns *11 per cent.* of income outside the city, and only about *5 per cent. of operating expenses outside the city,* thus depriving the City proper of its due proportion of income, and making it bear and undue proportion of operating expenses, and in this manner, after assignment — an undue proportion of the value of the plant to the City, the conclusion is reached that only 3.35 per cent can be realized as a return to the plaintiff company. This whole matter is based upon erroneous propositions.

385 In the Chattanooga case, decided by this court, not only was the income of the year after the ordinance adopted as the basis, but in the division of income between City proper and out side city, outside city was made to bear 20% of operating expenses, and

allotted only 15 per cent to the income, which was obviously just, as it costs more to deliver water at long distances than at short distances.

In disregarding the fact in making a comparison of actual income under the Company's rates and these potential income- under the city ordinance, that the company's rates make a discount of 5 per cent, while the city ordinance requires no such discount. So that, in comparing actual receipts under the company's rates with possible receipts under the city ordinance which makes a horizontal reduction this 5 per cent must enter as a very material consideration in the solution of the difference between the actual receipts of the company under its own rates and its possible receipts under the prescribed city rates.

"X."

The court erred in its ruling upon the question of operating expenses as indicated by the defendant's exceptions to the Master's report, and by the evidence in the case, and also in its failure to rule upon same in the following particles to-wit:—

(*a.*) In not having report of, and looking to the operating expenses of the year or some other period subsequent to the passage of the ordinance;—

(*b.*) In failing to exclude from the category an account of operating expenses as presented and claimed by the plaintiff company, the cost of this water rate litigation between the city and the com-
386 pany, and such items as expenditures for "cigars" and "contributions" to charitable" and other purposes in failing to exclude the expense of maintaining and unnecessary — Boston, Massachusetts, with a duplicate office at Knoxville, Tennessee, and in refusing to devide the salaries of office-s that perform services in both "construction and operation" between operating expenses and the construction account and in permitting the same to perform services on both accounts by unduly swelling them both.

"XI."

The Court erred in its determination that the horizontal reduction of the company's rates by the city's ordinance was 22.88 per cent. It was at least 5 per cent. less than this or about 18 per cent.

"XII."

The Court erred in its decision that the income realized under the City's ordinance would not afford a fair return to the plaintiff company, and erred in not deciding that 4 per cent. would be ample income to rescue the ordinance from the category of a confiscatory ordinance, but in point of fact, upon consideration of the company's income after the passage of the ordinance instead of before its passage, the income of this company under the ordinance would be sufficient, after paying operating expenses and providing 2 per cent. for depreciation, to allow the plaintiff company 6% return in addition to its taxes, which is more than sufficient to satisfy the demand of the law.

The Court erred in not holding that plaintiff was estopped to contest or complain if the city ordinance votes by its conduct in refusing to give the city counsel necessary information and withholding evidence on the hearing.

387 Upon the foregoing grounds, the defendant excepts and assigns errors to the decisions, decrees and ruling of the Court in this cause.

J. W. CULTON,
PICKLE & TURNER,
Att'ys for Def't.

(Endorsements:) No. 1260. Equity. Exceptions and Assignment of errors. Knoxville Water Company *vs.* City of Knoxville. Filed March 15th, 1905. J. T. Carter, Deputy Clerk. J. W. Culton Pickle & Turner Att'ys.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

The Answer of the Knoxville Water Company to the Statement of Henry O. Ewing, Special Master.

The plaintiff in this cause, the Knoxville Water Co., states that at the close of the hearing of the cause at Chattanooga in December, 1904, Henry O. Ewing, Special Master, stated to plaintiff's counsel that he desired for his compensation in this cause,

388 the sum of thirty five hundred dollars, ($3500.00) and plaintiff through its counsel then stated that it would not oppose the allowance of said amount, one half of which plaintiff was to pay, under the decree of the court Plaintiff now adher-s to that statement and will not oppose the allowance of thirty five hundred dollars to Mr. Ewing's estate, one half of that amount to be paid by plaintiff and one half by defendant.

THE KNOXVILLE WATER COMPANY,
By SHIELDS, CATES, MOUNTCASTLE,
JOSHUA W. CALDWELL, *Solicitors.*

(Endorsements:) No. 1260. Knoxville Water Company *vs.* Mayor & Alderman of Knoxville. Answer of Knoxville Water Co., to statement of H. O. Ewing, Special Master. Filed March 20th, 1905. J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

Statement and Answer of the Mayor and Alderman of the City of Knoxville to the Statement of Henry O. Ewing Relative to His Compensation as Special Master.

389 The defendant, the Mayor & Alderman of Knoxville submit- the following statement and answer;

This defendant had not reached any agreement with Special Master Ewing touching the amount of his compensation, prior to his death. He had specified the amount of $3500.00 as a basis for agreement, but this was not assented to by the City or its representatives and is not assented to now. This respondent believes that $2500.00 would be a full and reasonable compensation to Special Master Ewing, or to his estate for services rendered herein. He expended, as is stated by himself, ninety two days in taking evidence. Adding to this, one month for making up his report we have him engaged in this work for the period of four months or one-third of a year. His hotel bill for 92 days, expended at Knoxville at the rate of $3.00 per day which is ample, would be $276.00. He admits that he paid no railroad fare, and of course no board at the time he was making up his report, which was done at Chattanooga. Al- that was done by him, during the taking of evidence, was to attend to and be present and rule upon such matters that came up. The parties furnished a stenographer free of charge to the Commissioner, who took and reduced to writing the evidence, bound it, and furnished it to the Special Master.

The amount of $2,500.00 we repeat is ample compensation, this would give, after deducting expenses, over $500.00 per month for the reasonable employment in this business. Allowing this sum, gives the Special Commissioner as much for one third of the year as the chancellors and judges should get for a whole year.

In the Chattanooga case the court allowed Mr. Caldwell $1,000.00.

390 He made a claim for $3,500.00, as made by Special Master Ewing in this case. The amount claimed was objected to and was finally reduced to $1,000.00. The compensation which we submit as adequate in this case, to-wit, $2500.00 is two and one half times as much as was allowed Mr. Caldwell in the Chattanooga case, although the claim made by Mr. Caldwell in that case, was precisely the same as that allowed by Special Master Ewing in this case.

G. W. PICKLE,
Counsel for Def't.

(Endorsements:) No. 1260. Knoxville Water Company, *vs.* Mayor & Alderman of Knoxville. Reply and statement of Defendant to Application of Special Commissioner as to his compensation. Filed March 21st, 1905. J. T. Carter, Deputy Clerk.

(This entry p-. 390 to 392 inclusive is a brief filed. It was copied by mistake and is no part of record. D. L. Snodgrass, Clerk.)

In the Circuit Court of United States for the Northern Division of the Eastern District of Tennessee.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

The charge made by the Master in this case is for a special service. The compensation should be for the actual time and work
391 expended, besides taking into consideration *and* the nature of the service and the character of ability required. Compensation in such cases is not to be compared with compensation for services as salaries to Judges, Chancellors, etc. The salaries vary so wid-ly that none of them can be taken as standards of compensation. If so it might be insisted in behalf of Mr. Ewing that there are parties displaying no more ability than required of him whose annual compensation ranges from $50,000.00 to $100,000.00, but we repeat that salaries cannot be taken as in any measure the standard for fixing the compensation in this case.

Nor can the amount paid to Mr. Caldwell without a showing as to the exact amount of work performed by him, and that $1000.00 was full compensation in his case. The Court will remember that in the case of the City Water Company against the City of Chattanooga very little of the time of Mr. Caldwell was taken. The case was finally prepared for hearing in his absence and he was only called on finally to decide from the record the issues involved. The record itself was small in comparison to the record in the present case. In the statement filed in behalf of the City of Knoxville, no answer is made to the claim of Mr. Ewing except the bare assertion that $2500.00 would be sufficient, and that this sum was more than paid to Mr. Caldwell, and equal to the salaries of Judges and Chancellors. On the other hand, it appears that the City Water Company is content to pay as just the amount claimed by Mr. Ewing. It further appears that the actual work, including hotel fare, would amount to about $3000.00. Certainly the balance claimed would not more than compensate for the character of service performed by Mr. Ewing. We therefore insist in his behalf that he should be allowed the amount of his claim; in fact, strong argument could be
392 made for greater compensation, but we see no reason why the agreed amount should not be paid.

BROWN & SPURLOCK.

(Endorsements:) No. 1260. Knoxville Water Co. *vs.* Mayor & Aldermen of Knoxville. Brief for Special Master. Filed Mar. 28 1905. Henry O. Ewing Clerk.

393 In the Circuit — of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
BOARD OF MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

This case presents a question in all respects similar to the one recently considered by this Court in City Water Company *vs.* Mayor & Alderman of Chattanooga.

It is no linger open to doubt that the power to regulate water charges belongs to the municipal corporation for which the public service like that of furnishing water is being performed, and from which the corporation obtains its franchises to exist and to conduct its business.

It is also quite as well settled as a question can be settled that the power to regulate is not a power to confiscate, and that any attempted regulation must stop before it reaches a limit which practically brings about a confiscatory result.

This Court, in the case just referred to, took occasion to re-state the law applicable to questions of this class mostly in the very language of the adjudications themselves.

In regard to the settled law in relation to issues of this kind it was said in that case:

"The law applicable to the questions involved in cases like the one at bar is now quite well established, and will be found fully stated and re-stated in the following cases: Chicago, Milwaukee & St. Paul Railway Company *v.* Minnesota, 134 U. S. 418; Chicago, Burlington & Quincy Railroad Co. *v.* Chicago, 166 U. S. 226; Smith *v.* Ames, 169 U. S. 466; Covington & Lexington Turnpike Road Company *v.* Sanford, 164 U. S. 578.

The doctrine of the previous cases in relation to railroad and turnpike regulations was declared applicable to a water rate question similar to the one in question here, in San Diego Land & Town Company *v.* National City, 174 U. S. 739, in which the principles controlling the question were again declared in the following language:"

"What elements are involved in the general inquiry as to the reasonableness of rates established by law for the use of property by the public? This question received much consideration in
394 Smith *v.* Ames, above cited. The case, it is true, related the rates established by a statute of Nebraska for railroad companies doing business in that state. But the principles involved in such a case are applicable to the present case. It was there contended that a railroad Company was entitled to exact such charges for transportation as would enable it at all times, not only to pay operating expenses, but to meet the interest regularly accruing upon all its outstanding obligations and justify a dividend upon all its

stock; and that to prohibit it from maintaining rates or charges for transportation adequate to all those ends would be a deprivation of property without due process of law, and a denial of the equal protection of the laws. After observing that this broad proposition involved a misconception of the relations between the public and a railroad corporation, that such a corporation was created for public purposes and performed a function of the State, and that its right to exercise the power of eminent domain and to charge tolls was given primarily for the benefit of the public this Court said:

"It cannot therefore be admitted that a railroad corporation maintaining a highway under the authority of the State may fix its rates with a view solely to its own interests and ignore the rights of the public. But the rights of the public would be ignored if rates for the transportation of persons or property on a railroad are exacted without reference to the fair value of the property used for the public or the fair value of the services rendered, but in order simply that the corporation may meet operating expenses pay the interest on its obligations, and declare a dividend to stockholders. If a railroad corporation has bonded its property for an amount that exceeds its fair value or if its capitalization is largely fictitious, it may not impose upon the public the burden of such increased rates as may be required for the purpose of realizing profits upon such excessive valuation or fictitious capitalization; and the apparent value of the property and franchises used by the corporation, as represented by its stocks, bonds and obligations, is not alone to be considered when determining the rates that may be reasonable charged, 169 U. S. 544. In the same case it is also said 'the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property used by it for convenience of the public. And in order to ascertain that value the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statu-e, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth,' 169 U. S. 546.

This Court had previously held in Covington & Lexington Turnpike Road Company *v.* Sandford, 164 U. S. 578, 597, 598, which case involved the reasonableness of rates established by legislative enactment for a turnpike Company—that a corporation performing public services was not entitled, as a right and without reference to the interests of the public, to realize a given per cent. upon its capital

stock; the stockholders were not the only persons whose rights
395 or interests were to be considered; and that the rights of the public were not to be ignored. The Court in that case further said: Each case must depend upon its special facts; and when a court without assuming itself to prescribe rates, is required to determine whether the rates prescribed by the legislature for a corporation controlling a public highway are, as an entirely, so unjust as to destroy the value of its property for all the purposes for which it was acquired, its duty is to take into consideration the interests both of the public and of the owner of the property, together with all other circumstances that are fairly to be considered in determining whether the legislature has, under the guise of regulating rates, exceeded its constitutional authority, and practically deprived the owner of property without due process of law.

The utmost that any corporation operating a public highway can rightfully demand at the hands of the legislature when exerting its general powers, is that it receives what under all the circumstances is such compensation for the use of its property as will be just both to it and to the public.

These principals are recognized in recent decisions of the Supreme Court of California, San Diego Water Company *v.* San Diego, (1897) 118 California, 556; Redlands Domestic Water Company *v.* Redlands, (1898) 53 Pac. Rep., 843, 844.

The contention of the appellant in the present case is that in ascertaining what are just rates the Court should take into consideration the cost of its plant; the cost per annum of operating the plant, including interest paid on money borrowed and reasonably necessary to be used in constructing the same; the annual depreciation of the plant from natural causes resulting from its use; and a fair profit to the Company over and above such charges for its services in supplying the water to consumers, either by way of interest or on money it has expended for the public use, or upon some other fair and equitable basis. Undoubtedly, all these matters ought to be taken into consideration, and such weight be given them, when rates are being fixed, as under all the circumstances will be just to the Company and to the public. The basis of calculation suggested by the appellant is, however, defective in not requiring the real value of the property and the fair value in themselves of the services rendered to be taken into consideration. What the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public. The property may have cost more than it ought to have cost, and its outstanding bonds for borrowed money and which went into the plant may be in excess of the real value of the property. So that it cannot be said that the amount of such bonds should in every case control the question of rates, although it may be an element in the inquiry as to what is, all the circumstances considered, just both to the company and to the public.

In one or two other well considered cases opinions have been pronounced since that time which speak the same language.

In regard to the merits of the contentions here arising it is sufficient on this occasion to say that I think a *prima facie* showing has been properly made for an injunction, and that the execution
396 of the ordinance in question should be arrested pending the determination of the issues now involved. If the Court were to permit the execution of the ordinance as now threatened, it would, according to the allegations of the bill, bring ruin upon the complainant[k] such as the Court would be powerless at the end of the litigation to remedy in any practocal method known to the law. Stated in another form the injury which would be suffered in the meantime would be practically without remedy and the wrong irreparable.

On the contrary it is not difficult to require the complainant company to execute, in favor of the defendant, a bond in proper amount for the use and benefit of the consumers of water, and conditioned in the event that the complainant is defeated in this litigation, and the ordinance sustained, the complainant will pay the penalty of said bond, or so much thereof as may be necessary to reimburse all consumers of water for the difference between the charges which the Company may make pending this case, and such charges as it might make according to the rates fixed by this ordinance.

It will then only be necessary to turn to the account of each consumer and readily determine the excess charges paid and find the aggregate amount to be paid under the bond, and this can readily be refunded to consumers of water, and in this way all parties concerned in the defence of this bill can be adequately protected.

The case is one in which, from its nature, much proof will become necessary, of an expert character, and the services of a referee or master will be needed, and the sooner the proper order of reference is prepared and entered, and the case put in rapid progress before the master, the better it will be for all concerned.

The power to regulate charges being unquestioned, it would be altogether wise and better if the City of Knoxville, and this Company would not stand off and contend with each other as enemies, or at arms' length, but would try in a friendly spirit, and by the aid of skilled and competent persons, to determine what would
397 be a fair rate of charges and settle upon a basis such as this.

If this is not done, and stubborn litigation must be had, it will be found quite expensive in the end, and such remedy as ought to be had more promptly will come only after considerable delay. Still, in the absence of an agreement, there is no doubt that it is the duty of the Court to make the proper investigation, as it is a judicial question.

In speaking of a possible delay of a remedy it must not be forgotten that the Court is wholly without the power to fix rates of charges. The Court can only investigate and determine the question whether rates which have been fixed are lawful, or unlawful. If they are unlawful the Court simply declares the ordinance unconstitutional and void, and with that the judicial power ends, and anything else which may be done is legislative in its character.

Of course if the case should result in a decision upholding the validity of the ordinance, its execution could be resorted to and a final remedy at once had, but if the ordinance should be declared invalid the City is then left just where it started when this ordinance was enacted, and it will become necessary to adopt a new ordinance, which would likely be drawn in question again, and great delay in that way result before any final relief could be obtained.

In regard to the question raised in the outset as to the validity of the charter under which the plaintiff company is operating, I will only say that I do not wish now to express a view which shall be regarded as final upon this question. I am certain the question is not one which I should dispose of at this stage of the case, otherwise than by saying that my present impression is that the charter is valid, and secondly if it is not the question cannot be raised or litigated in this proceeding.

If both questions be regarded as close it is never the less
398 true that the plaintiff should not be denied its standing in Court, unless these issues are clearly against it.

In Coxe *v.* the State, 144 N. Y. 396, it was distinctly ruled that a corporation organized under an act of the legislature, and which had assumed to exercise corporate powers thereunder, became a *de-facto* corporation, notwithstanding the act of the legislature under which it was organized was declared unconstitutional because it violated that provision of the New York constitution which declared that no local or private bill should be passed embracing more than one subject, and which subject is required to be expressed in the title.

It is clearly not open to question that where there is an act of the legislature under which a corporation might be formed, and there has been an attempt in fact to organize under such a statute, the company thus attempting to organize becomes a corporation *de-facto*, and its corporate existance cannot be drawn into question collaterally.

The able and distinguished counsel for the defendant has urged, and with very much force indeed, that where there is no statute under which a corporation might be formed, a different rule obtains and the question of corporate existance is always open, either directly or collaterally, and it is said that when a statute is unconstitutional the situation is exactly the same as if there were no statute at all, and it is fully recognized that there are much considered cases which hold to this view.

On the contrary, as I have just stated, a different view was declared in the case of Coxe *v.* The State, in which it was held that even when the act of the legislature is unconstitutional, it nevertheless requires the judgment of a competent court in a direct proceeding, or an act of the legislature, to terminate the corporate existence *de-facto* of a company formed under such an act.

The case of Smith *v.* Sheeley, 12 Wallace 358, is referred to in the text books as fully sustaining the conclusion arrived at in Coxe *v.* The State. It was not necessary however, in this last case
399 to decide the exact point presented in Coxe *v.* The State, while it must be conceded that the reasoning of the Court tended strongly to a similar result.

Although not in point, the following cases may be consulted as to the general reasoning upon the subject: Baltimore and Potomac Railroad Company *v.* Fifth Baptist Church, 137 U. S. 568; Dallas County *v.* Huidekoper, 154 U. S. 654; Shapleigh *v.* San Angelo, 167, U. S. 646.

I do not deem it necessary now to inquire which one of these conflicting views is supported by the greater weight of authority, or the better reason. I will undertake to do this on final hearing, if the case shall then seem to require that I should do so.

In this view I do not find it necessary to consider the question of estoppel, but I think upon the facts, as indicated by this record, the defendant will have much difficulty in maintaining the position that it is not now estopped to question the corporate existance of the plaintiff. However, for the present, I leave that question undecided.

For the present I am satisfied to require the plaintiff to execute bond in the sum of $10,000.00 in favor of the defendant in name, and for the use and benefit of the defendant so far as its rights may be concerned, and for the use and benefit of consumers of water, and conditioned, as already indicated in this opinion, to abide by and perform the judgment of the Court on final hearing, and in the event the plaintiff fails to succeed in this suit to pay into Court all, or such portion of said bond as may be required by order of the Court, for the purpose of paying to the defendant City any excess charges made, in order that such excess of charges may be refunded to those who pay the same pending the litigation. If this bond is not regarded as sufficient in amount I will, on a proper showing, require a larger bond, or the parties may agree upon a bond sufficient in amount, and the bond must be executed with surities, so that the Deputy Clerk of this Court at Knoxville will certify that the
400 same is good, and the bond may be executed before and approved by the Clerk of this Court, or the Deputy Clerk at Knoxville.

An injunction will issue, as prayed for in the bill restraining the execution of the ordinance, on condition that such bond is properly executed.

(Signed) CLARK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Co. *vs.* Board of M. & A. of Knoxville. Opinion Granting inj. Filed Jan. 27, 1902. J. T. Carter, Deputy Clerk.

Filed Nov. 2, 1901.

MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE
vs.
KNOXVILLE WATER CO. ET ALS.

Law Docket, Knox Co.

Opinion.

This suit arises out of an effort upon the part of the City of Knoxville to enforce an ordinance which effects the defendant Water Company, and as it claims seriously interferes with its operations and unlawfully encroaches upon its franchises and vested rights. The water Company has a valuable plant at Knoxville, which it has erected and operated under contracts and ordinances made by the City of Knoxville, and it has valuable
401 franchis*ing* in the furnishing of water to the City and people.

The relative rights of the City and Water Co., and their obligations one to the other appear to have been drawn into sharp controversy when the City on the 30th of March 1901, passed and approved the ordinance in controversy in this suit, specifying a maximum rate to be charged to consumers by any firm or corporation in the City of Knoxville, and providing a high penalty for a violation of its terms and provisions as set forth in its 3rd section to-wit:

SEC. 3. Be it further ordained, That it shall be unlawful for any person, company, firm or corporation or the*ri* officers, agents, servants or employés, supplying water to the inhabitants of the City of Knoxville to charge, demand or collect for water so supplied, more than the rates hereinbefore set forth in Sec. "1" of this ordinance, and it shall also be unlawful for any such person, company, firm or corporation or their officers, agents, servants or employés to cut off or otherwise interfere with the supply or refuse to furnish a supply of water to any consumer for failure to pay for same, provided such consumer tenders in lawful money, the charge for such water at the rates aforesaid, and any violation of the provisions of this section of this ordinance, shall be a misdemeanor, and upon a conviction thereof before the Recorder, the offender shall be punished by a fine of not less than $10.00, nor more than $50.00 for each offense.

The Defendant Company continued to charge the rates provided in a contract and previous ordinance of October 20th, 1899, which (with the exception of some rates in the Lonsdale Beaumont ordinance) were slightly in excess of the rates and charges provided in said ordinance of March 30th, 1901, and thereupon this suit was instituted, and the defendant was charged with unlawfully charging, demanding an*e* collecting of W. K. McClure for water furnished and to be furnished him in the City of Knoxville, more than
402 the rates fixed therefor by the ordinance o*df* March 30th, 1901.

McClure was the agent for J. S. Gratz who then lived in the City of Chicago, but was the owner of three houses and lots in the City of Knoxville, and outside of the 10th, ward. In 1896 the defendant Company made a contract with Gratz to supply water to the premices owned by him, which contract is as follows:—

Knoxville Water Company. Service No. 2850.

KNOXVILLE, TENNESSEE, *Sept.* 17, 1896.

The undersigned hereby applies to the Knoxville Water Company for a supply of water at premices No. 706 High Street, owned by J. S. Gratz, occupied by tenants to be used for domestic purposes only, and I, hereby agree to use and pay for the same in accordance with t-e rates, rules and regulations of the Knoxville Water Company as now, or hereafter in force, and which are made a part of this contract.

And I further agree that said Company may enter upon any land owned by me, and in which I may have such right and place therein, upon the terms provided therefor all the pipes that may be used for furnishing such supply, and may cause the *smae* to be inspected and repaired at any future time as occasion may require.

This contract was signed by J. S. Gratz by his agent W. K. McClure.

The water in controversy was furnished to tenants living in the property owned by Gratz for whom McClure was agent, and who, as such agent, represented the owner Gratz in renting the property, and the bills were rendered to W. K. McClure as agent, and paid by him in that capacity, but actually paid out of funds belonging to the owner J. S. Gratz, and the bills so rendered for said water were in accordance with the rates prescribed by said contract and ordinance of October 20, 1899; the difference between the rates charged by the defendant and paid by Gratz, through McClure, for the three premices to which the wayer in controversy was furnished, and what would have been paid under the ordinance of March 30th, 1901, was $1.15, that is 50 cents, 42 cents, and 25 cents, respectively.

403 The first question presented is as to the validity of the ordinance of March 30th, 1901, because of the manner of its passage by the City Council.

The Charter of the City of Knoxville, provides that no ordinance shall become a law without first having been read and passed at three several meetings, that is, at three several regular meetings of the Board, or at three several regular meetings or valid "call" or "special" meetings, which the Mayor, by said charter, is authorized to call. The regular meeting- of the Board of Mayor & Alderman of the City of Knoxville, are on the First and Third Friday nights of each month. The ordinance of March 30th, 1901 was passed at its first reading at a special meeting on March 9th, 1901: on its second reading, at a regular meeting on March 15th, 1901; and on its third and final reading at a special meeting on March 30th, 1901. The Mayor and eleven Alderman, that is one Alderman from each ward, constitute the Board of Mayor & Ald-rman of the City of

Knoxville. At the special meeting of March 30th, 1901, Alderman Cleage, representing the 6th. ward, and Alderman Trigg, representing the 5th. ward, were not present and were not notified, and no effort was made to notify them, nor did they have any notice or knowledge of said meeting. Alderman Trigg had removed from the City, and notice to him it is conceded was not necessary. Alderman Cleage was not present at the meeting of March 30th, 1901, was not notified of that meeting and had no knowledge thereof. When Alderman Cleage was elected an Alderman for the 6th. Ward of the City of Knoxville, he was then as he was in March, 1901, residing with his mother on Broad Street in the 6th Ward of the City of Knoxville, but he was in the employ of the Southern Railway, with headquarters principally at Asheville. He was active in the discharge of his duties as an Alderman, attended nearly all of the regular meetings and such special meetings as he had notice of, and was usually informed by telegram of special meetings, and had attended as many as three special meetings in one week,
404 coming more than a hundred miles to do so. No effoct was made to notify Alderman Cleage of either of these special meetings.

On request foe a finding — *gacts*, the trial Judge found that it was practicable to have given Alderman Cleage notice of these special meetings and that it was practic*ba*le for him to have attended the meetings of March 9th, 1901, — and that no emergency existed for the passage of the ordinance in question at these special meetings.

The first assignment of error we consider, is that the trial judge erred in holding that the Mayor was bound to give Alderman Cleage notice of the special meeting of March 9th, and March, 30th, 1901, these being the dates when the ordinance in question was passed on its first and third readings, and for failure to give such notice the ordinance is void. The contention is that said Cleage was out of the City, and State and not within summoning distance, and no personal notice to him of said meetings was practicable, and therefore the action of the Council, without notice to him, was not thereby invalidated. In support of this assignment authorities are cited. The fact that Alderman Cleage was not notified, of the meeting, and that no attempt was made to notify him, fully appears and is not controverted.

The general rule is that every member of the Municipal Council is entitled to reasonable notice of special meetings, and that no important action can be lawfully done by such meeting unless such notice has been given, or unless the members not notified, actually attend and participate in the business of the meeting. Land Co. *vs.* Jellico, 10 Pickle, 321.

It is said that the rule is quite rigidly stated in that case but that conceding it to lay down the general doctrine, still there are exceptions to such general rule and that one of these exceptions excuses notice when it is not practicable to give it, and for this proposition is cited in the printed brief:—

I Dillon on Mun. Corp. Sec. 286.
1 Beach on Publ. Corp. Sec. 271.
405 15 Enc'l Law (1st Ed.) pp. 1034-1035.

Other authorities are cited as applicable to cases of private corporations and inferior municipal and School Boards which we think we need not consider. As bearing upon the main question it is suggested that it has never been the custom in Knoxville to give notice to each and every one of the Board of Special meetings: that Cleage had virtually removed himself from the State so that service upon him was impracticable; that in the case of Land Co. *vs.* Jellico, 19 Pick, 320, it appeared that the Alderman who was not notified was in the building where the meeting was held, and the inference might be that he was purposely omitted from the notice as he was hostile to the ordinance that was considered and the meeting was at the instance of the persons interested in the passage of the ordinance, while in this instance, as afterwards developed, Alderman Cleage was in favor of the ordinance, and would have voted for it, if he had been present at the meeting.

We pass over these and minor exceptions and proceed to consider the merits of the 1st assignment.

In 1st Lillon, Municipal Corporation, 4th, Ed. Sec. 286, it is said:—

"If the meeting of the Council be a special one, the general rule is, unless modified by the charter or statute, that notice is necessary and must be personally served if practicable upon every member entitled to be present so that each one may be afforded an opportunity to participate and vote."

In Section 263 it is said:—"A notice when necessary must, if practicable, be given to every member who has a right to vote when the act is one to be done by a body consisting of a definite class or classes and it must be given by or issued by some one who has the authority to convene a corporate meeting.

406 But notice may be all together dispensed with or its necessity waived by the presence and consent of everyone of those entitled to it. It must be served personally upon every resident member or left at his house. If temporarily absent it may be left with his family or at his house or last place of abode. An order to serve all is not sufficient. All if practicable, must be served, but if the party entitled to notice has entirely quit the municipality and has no family or home within its limits notice is not necessary."

In Section 264 it is said, among other things: Such great importance is attached to notice, that it can only be waived by universal consent, but every member of a select body be present at a regular or stated meeting, or at a special meeting, *they may if every one consents, but not* otherwise, transact any business, ordinary or extraordinary, though no notice was given, or any insufficient notice, *but the unanimity of consent should clearly appear from their* recorded declarations, acts or conduct. If the charter imperatively requires a special notice it cannot be waived even by the consent of all.

In 1st. Beach on Public Corporations Sec. 264 it is said:

"When a meeting is assembled for a special purpose every member who has a right to vote is entitled to notice unless he has quit the municipality without retaining a home or leaving his family within its limits.

It must be personally served upon him, but in case of his temporary absence, it may be left with his family or at his last place of abode."

Again Section 271:

Every member entitled to be present at a special meeting is entitled to notice of the time and place thereof, which must be served
407 upon him personally if practicable, or unless some other mode of notice is prescribed by the Statu-e or charter," for all these propositions, authorities are liberally cited.

In 15th, Am. & Eng. Ency. Law, page 1035, it is said:

A meeting held at any other time than that fixed for a regular meeting under a resolution of the Council or a special meeting under the call of the Mayor is a legal meeting if all its members actually attend and participate in its proceedings and it is otherwise regular."

In Lond *vs.* Anoka, 36 Minn. 176, it was held that under the charter of the Defendant a special meeting of the City Council is not valid unless called by the Mayor by written notice to each member of the Council delivered to him personally left at his usual place of abode, or unless all the members, at least all who are not notified, are present at the meeting. And in Beaver Creek *vs.* Hastings, 52 Mich. 528, it is said notice may be dispensed with or waived by the presence of every one entitled to it.

In Pacola *vs.* Commissioners, 16 Kas. 302, holding that the acts of a Board of County Commissioners at a special meeting were invalid because all members were not notified, Mr. Justice Brewer said:

"The Statutes providing for the sessions of the County Board is found in section "18" page "256" of the general statites. That section after providing for the meeting of the Board in regular session, adds "And any special session on the call of the Chairman at the request of two members of the Board, and as often as the interest of the County may demand." This is the only statutory provision on the subject. It does not specify whether the call shall be made, or require a record to be preserved of it. And the same is true as to the request. But still it requires a call and the call of the meeting is the legal sense of the term, is a summons to the
408 parties to meet, directing them to meet. It involves something more than a mere purpose in the mind of the caller or an expression of that purpose unheard, unseen or unknown. It implies a communication of that purpose to the parties to be affected by it. How it shall be communicated is sometimes prescribed by the statute or by-law. It is sometimes provided that it shall be by publication is a newspaper: sometimes by printed notice served personally or at the residence and sometimes by mere oral personal service. But in some way or other notice must be given; and if there be no regulations as to the manner of notice, it must be personal notice. This is no new question. It has arisen in respect to the sessions of common councils, of cities, boards of directors or trustees of private corporations; the town meetings of New England, the meetings of most of Corporations, Board of Directors, etc. And there is but one uniform rule running through the authorities. In the

case of Rex *vs.* Mayor, etc., of Shrewsberry, Rep, Temp. Hard. 151, it was said by the Court, that 'when the acts are to be done by a select board, notice must be given at the time of special meetings.' It was a saying of Lord Kenyon's that special notice must be given to every member who has a right to vote.

In regard to County Boards, it is said—A special session of the Board has no power to transact business unless it has been called in the manner provided by law, and notice of the meeting is in all cases essential.

Am. & Eng. Ency., 2nd. Ed. 979 N. 2, citing, among other cases, Pike Co., *vs.* Rowland, 94 ps. St. 238, which holds that if the meeting be special, notice is necessary and it must be personally served if practicable upon every member entitled to be present.

In People *vs.* Bachelder, 22 N. Y. 129 it was held that
409 the election of the Clerk of the 1st, District Court was void because five absent Alderman had no notice of the convention.

Mr. Justice Selden for the Court, said:—

It is not only a plain dictate of reason, but a general rule of law that no power or function entrusted to a body consisting of a number of persons, can be legally exercised without notice to all the members composing such body.

The case of the State *vs.* Wm. Kirk, 46 Conn. 397 *in* somewhat obscurely reported, but as we read it, it appears that Wm. Kirk was elected Street Commissioner of the City of Bridgeport on the 8th, of April 1878. It appears that he had been previously elected to the same office, but the exact date does not appear. He insisted that he was legally elected on the 8th, of April, but if that contention was not correct he was rightfully in office as a holdover from his former election. It appears that at the first election, one member of the Board was not notified. The Court held that a good reason was shown why actual notice was not given. The member given was not only gone from the State, but his whereabouts appear not to have been known until afterwards. Notice in writing was left at the store of his Son, where he was in the habit of visiting every day when in town. The Court said no other notice could well have been given and the law never required impossibilities.

But in the same case it appeared that by the charter the Mayor was *ex-officio* a member of the Board, and its Chairman, and entitled to preside. He was not notified of the meeting, and it was held that the meeting was illegal although he had no vote except in case of a tie. And it appeared that in the particular instance he would have had no vote. The report of the case as furnished us is not satisfactory, but it clearly appears that the Mayor might have
410 been notified and was not and the meeting was adjudged illegal. While in the other case the member could not be found and hence was not notified, though all was done that could have been done, and it was impossible to do more.

The finding of the trial Judge which was asked for by the plaintiff, as to Alderman Cleage contains among other statements not important in this connection, the following:—

"At the time of his election as an Alderman of the City of Knox-

ville on March 9th, 1901, and March 30, 1901, he was in the employ of the Southern Railway Co., as law agent with his headquarters at Asheville in the State of North Carolina, and transacted his business principally in the State- of North and South Carolina, and outside the limit of the State, his territory including about 500 miles of railroad. His duties require him to go in person over his territory investigating, reporting and adjusting claims for damage against said R. R. Co., that during the months of February, March and April, he was more than usually busy in the discharge of his duties, but retained his home in the 6th, ward in the City of Knoxville, and was active in the discharge of his duties as an Alderman: that he attended nearly all the regular meetings of the Council and nearly all the special meetings of which he had notice: that — was impracticable for him to have been present on M· ch, 30th, 1901, at the special meeting on that date, but it was not impracticable to have given him notice of that meeting; that it was not impracticable to have given him notice of the meeting of March 9th, 1901, but it does not appear that it was impracticable for him to have attended that meeting; that there was no emergency for this ordinance to be considered at special meetings of March 9th, and March 30th, 1901, and as a public servant and official he had a right to have notice of these meetings but notice was not given him, and therefore this ordinance of March 30th, is invalid.

411 There are various exceptions to the finding of the trial judge but we think we need notice only one or two of them.

In the 10th, Sub-Division of the 3rd. assignment of errors, it is said—"He (the trial judge *erroneously* found that it was practicable to have given Cleage notice of the special meetings of March 9th, and March 30th, 1901 and that it does not appear to have been impracticable for him to have attended the meeting of March 9th. There was no evidence to support this finding. It was contrary to all the evidence on the subject. Cleage was beyond the limit of the City and State, his exact whereabout were unknown to the officials of the City and the facts and circumstances as shown by Cleage as well as his direct testimony to the fact all show to the contrary of the Court's finding on this question.

This assignment, that there is no evidence to support the finding of the trial judge, requires us to go behind that finding and look into the record and see whether there is any evidence on which to base it.

In this connection it may be remarked that the question whether notice was or was not practicable is one of mixed fact and law. It appears from the testimony in the record, that each call for a special meeting on the 9th, and 30th, of March 1901, was for a meeting to be held on the night of the same day the call was made, that is, on the night of March 9th, and March 30th, respectively. It clearly appears from the evidence of Alderman Cleage that on both of these days he was beyond the limits of the State. He cannot identify particularly the exact place where he was on the 9th, but he was at some point on his territory, all of which was outside the limit of the state. He is very positive and definite that on the 30th, of

412 March 1901, he was in North Carolina at the extreme end of his territory, about three hundred miles from Knoxville.

We are of the opinion that when a member of the Council removes from the State or is continuously absent from the State, and when he is shown to have been absent from the State and beyond reach on the occasion and at the time of the call, as appears in this case, it is not *legally practicable* to give him notice of called meetings, As to the necessity and urgency of such called meeting, the Mayor must be the Judge. In this case it appears that the action was desired at the time in order to put the new ordinance in force before the beginning of another quarter, when current bills for water would be payable in advance. As to the sufficiency of this urgency it is not incumbent on us to determine. The Charter provision is that the Mayor may call special meetings whenever, in his judgement, the good of the City requires it.

Tested by these rules which makes the question as to whether or not notice was practicable, one of mixed law and fact, we think the evidence is that notice of these special or called meetings was legally practicable to have been given to Alderman Cleage. Moreover it appears that if he had been notified of the call of March 30th, as soon as possible after it was made, it would not have been practicable for him to have attended the meeting of that day as he was about 300 miles from the City of Knoxville,—this, however, we consider of no practical importance.

The ordinance not being invalid because of the manner of its passage, we proceed to consider the other question presented in the record.

It is further objected to this ordinance that it is invalid and inadmissible in evidence because it was published in a Sunday newspaper.

413 It appears, that the ordinance, by authority of the City, was published in the Sunday issue of the Journal & Tribune, a morning daily paper of the City of Knoxville, on March 31, 1901. It further appears that since 1866, Sunday editions of the daily papers have been published in this City and that these editions are the largest and most important, have the largest circulation, and are the best advertising mediums of any of the daily issues of the papers.

By the Charter of the City of Knoxville, Acts, 1885 Special session, Chapter 8, Section 28, it is provided "This act is declared to be a public act and may be read in evidence in all Courts of Law and Equity, and all ordinances, resolutions, and proceedings of the Board of Mayor and Alderman may be proved by the seal of the Corporation, attested by the Recorder, and when printed and published by the authority of this corporation, the same shall be received in evidence in all Courts and places, without further proof, when certified to be the Recorder,

This is the only requirement as to the publication of ordinances.

We have been cited to quite a diversity and collection of authorities bearing more or less upon this feature of the case. It has been held in Tennessee that the acknowledgement of a deed by a married woman with her privy examination is valid, though made on Sunday.

Lucas, *vs.* Larkin, 1 Pickle, 335.

It is said contracts in Tennessee made on Sunday have never been held by our Supreme Court to be void. It is held by the Federal Courts, construing Tennessee Statutes, that they are valid.

Swann *vs.* Swann, 23 Fed. Rep., 299 citing Amis *vs.* Kyle, 2 Yerg. 31.

Also notes to Shannon's Code, Sec. 3029.

414 As applied to newspaper publications, which may be regarded as process, they are held void, just as any other judicial proceedings on Sunday are invalid, under the rule, both at common law and by statute above stated, that Sunday is "*dies non juridicus.*"

17 Ency., Pl. & Pr. p. 102.

The leading case cited in support of this text is—

Schwed *vs.* Hartwitz, 22 Colo., 187.

Same case 58 Am. St. Rep. 221.

This holds that the publication of a notice of a tax sale is in the nature of service of process, and if it takes place in a Sunday edition of a newspaper, it is void. The same holding upon the same ground is made in the case of Sawyer *v.* Cargile, 72 Ga. 290, which is another tax sale case. See note to 24 Ency. Law, 577.

But no other notice or publication made on Sunday, unless specially prohibited by statute, is void.

"In Hastings *vs.* Columbus, 42 Ohio St. Rep. 585, it is held that the publication of a preliminary and other ordinances of street improvement, which were required to be made in a newspaper of general circulation, may be made in a paper published only on Sunday." This case is directly in point.

"Where there is a stipulation between private parties that notice shall be given by publication of 10 days, publication on Sunday may be counted."

Kigsbury *vs.* Buckner, 71 Ill. 514. Cites in Note 1 to 24 Encl. 1st. Ed. p. 577.

"In South Carolina, it is held that notice of escheat is not a process, such as is me-nt that Sunday is *dies non* nor when published in a newspaper on that day, it is served on the day. The statute forbid-ing the service of civil process on Sunday does not make such process void."

Eason *vs.* Wilfcoskey, 29 S. C. 289, Cited in note to, 24 Enc'l Law, 1st, Ed. P. 575.

415 "Notice to a consignee, given on Sunday, of the arrival of a cargo, is valid."

Lake *vs.* Hurd, 38, Conn. 540.

"And notice to quit is not invalid because given on Sunday."

Sangster *vs.* Noy. 16 L. T. (U. S.) 157.

24 Enc'l Law. 1st Ed. 579.

So to-, and enlistment made on Sunday is valid.
Walton *vs.* Garvin, 16. Q. B. 48.

The statute laws of the different states are so varient, that we can derive but little aid from their holding.

It is further said the validity or invalidity of an act done upon Sunday does not rest upon religious or moral grounds, or upon public policy, but solely upon the question as to whether it violates the provisions of the law, either statutory or common.

Swann *vs.* Swann. 21 Fed. Rep. 299.
Mosely *vs.* Nanhooser, 6 Lea, 286.

It is a purpose of the publication of an ordinance like that in question to bring it to the attention of the public, and it appears that the publication in a Sundays newspaper is the most effected notice that could be given in the City of Knoxville. If it accomplished the very purpose intended by the requirement, to publish the act, and there is neither public policy or forbidding statute to be contravened by the act of publication, it seems that no ground could be suggested why this publication is not good.

We think this the correct view not withstanding the very able and ingenious argument made by councicil and backed up by many authorities of high respectability, among which may be cited—

416 Ormsly *vs.* City of Louisville, 75 Ky. 197.
Same case 4 Am. & Eng. Corp. cases, 842.
Duman *vs.* City of Denver, 65 Pac. Rep. 580.
Sewall *vs.* City of St. Paul, 20 Minn. 511.
Scammon *vs.* City of Chicago, 40 Ill. 146.
Showed *vs.* Hartwitz, 23 Colo. 187.

Many of these cases could be distinguished, but after all, there is a conflict of authority arrising largely from a difference in the Sunday laws of the several states.

We are content with the conclusion we have reached as being the most practicable and at the same time free from any valid legal objections.

In order to properly appreciate the very serious questions presented on the merits, it is necessary to give a short resume of facts bearing upon the history of the Water Works Company, and its connection with and relation to the City of Knoxville.

A. Condensed statements of these facts as given by Council, and which we find substantially correct is as follows:

(By the Charter of the City of Knoxville, as compiled from former acts, and as embodied in the acts of 1885, Special Session, Chap. 8, Section 18, sub-section 7, the Board of Mayor & Alderman is authorized by ordinance, "to provide the City with water by water works, within or beyond the bound-ries of the City, or provide for supplying the City with water other wise." The Knoxville Water Co., was Chartered and organized under act of 1877, Ch. 104, amendatory of the act of 1875, Ch. 142, Section 2 of that act provides, that such charter shall not be granted until after leave to operate under the same shall have been first had and obtained from the corporate

authorities of the City, town or village, in which it is proposed to operate such water works, and such leave shall be certified by the Mayor or Recorder upon the application, and registered with it, but

this act is in no way to interfere with the police or general
417 *powers of the corporate authorities of such City, village or town, and such corporate authorities shall have power by ordinance to regulate the price of water to be supplied by such Company."*

It is insisted, and as we think, correctly that it has been settled that the State, by direct enactment of its legislature, or by authority deligated by the legislature to counties or municipalities, may regulate public utilities, and the rates to be charged for public service by corporations or individuals, rendering any service to the public. This doctrine has been applied to elevators, telephones, gas Companies Water Companies and other public or quasi-public servants.

The leading case on the subject is that of

Munn *vs.* Warehouses, 94 U. S. 183.

See also Turnpike Co. *vs.* Croxton, (Ky. 23 L. R. A. 177. and extensive note thereto, reviewing the various cases on the subject.

R. R. Commission cases, 116, U. S. 307, 347, 352.

San Diego Water Co. *vs.* San Diego, (Cal.).

62 American State reports, 261, and extensive note thereto, reviewing many cases on this subject, p. 289.

Danville *vs.* Danville Water C. (Ill.). 69 Am. St. Rep. 304.

Rogers Park Water Co. *vs.* Pergus, (Ill.). 69 Am. St. Rep. 215.

Crumbley *vs.* Water Co., 15 Pick. 420.

Spring Valley Water Works Co. *vs.* Schottler, 110, U. S. 347, 28 L. Ed. 175.

Watauga Water Co. *vs.* Wolfe, 15 Pick. 430.

Rushville *vs.* Rushville Natural Gas Co. 15. L. R. A. and note.

That such power may be deligated to a municipality see San Deigeo Water Co. *vs.* San Deigo, *supre.*

15 Am. & Eng. Ency. Law, 1 Ed. p. 1167.

On the 1st of July, 1882, an agreement was entered into between the City and the Water Company in regard to the erection by the latter of water works, and the supplying for a period of thirty years, the City and its inhabitants with water, in which among other things it is stipulated by section 7. (said Company will supply private consumers with water at a rate not to exceed 5¢ per hundred gallons.) This contract provides as follows:—

2nd. The City further obligates itself not to grant to any
418 person or corporation, any contract or privilege to furnish water to the City of Knoxville, or the privilege of erecting upon the public streets, lanes or alleys, or other public grounds for the purpose of furnishing said City or the inhabitants thereof

with water for the full period of 30 years from the first of August A. D. 1883.)

A further statement of facts is as follows:

On April 18, 1891, an ordinance was enacted by North Knoxville, cons-tuting an agreement between it and Wheeler and Parks, for the latter to supply said town and its inhabitants with water until June 3rd, 1913, and by section 9 of that ordinance it was provided that water to be furnished private consumers shall be charged for at "not exceeding the rates contained in the following schedules," and then sets out said schedule of rates.

That contract was *sud*sequently assigned to the Knoxville Water Company by Wheeler & Parks, and the town of North Knoxville became consolidated with and incorporated into, the City of Knoxville.

On Sept. 17th, 1892, an ordinance was enacted by the City of West Knoxville, constituting an agreement between it and the Lonsdale-Beaumont Water Company for the supplying of water to said town and its inhabitants by said Company for a period of twenty years, in which it is -rovided among other things by section #9, that *sadi* Company shall not -harge consumers during the continuance of the franchise granted by said ordinance (exceeding the following maximum annual rates) etc., and then sets out the schedule of such rates.

Said contract was subsequently assigned by said Lonsdale Beaumont Water Co. to the Knoxville Water Co. and the town of West Knoxville became consolidated with, and incorporated into, the City of Knoxville.

419 On October 20th, 1899, an ordinance was passed by the City of Knoxville, then embrasing the territory of North and West Knoxville authorizing the said Knoxville Water Company to take the assignment of said contract of the Lonsdale-Beaumont Water Co., to supply water to the inhabitants of the territory of West Knoxville, upon certain conditions, among which was, that they should furnish to the inhabitants of such territory water at a maximum (rate not exceeding that fixed in the ordinance and contract of September 17th, 1892," and further that they should supply to the inhabitants of the balance of the City of Knoxville, water, "at a maximum rate, not exceeding that fixed by the contract of July 1st, 1882, and the schedule of rates and charges now in force and operation by the Knoxville Water Company.)

On May 17th, 1895, the City passed an ordinance regulating the supplying of water by meter, and fixed the rates and charges therefor by private consumers, and these rates were incorporated into the schedule of rates of the Defendant in force on October 20th 1899.

On July 27th, 1900, the City passed another ordinance regulating and fixing the rates generally to be charged to consumers of water, at a lower rate than that fixed by the schedule in force on October 20, 1899, and repealed all former ordinances in conflict therewith.

Again on March 30th, 1901 the City re-enacted this ordinance of July 27, 1900, with slight amendments, fixing the same schedule of water rates as those set out in the ordinance, of July 27, 1900.

The present suit arrises under the last ordinance. *The question of whether the rates fixed by the ordinance in question are reasonable has been preterminated in the proof and not considered*
420 *in this case.*

It is insisted that it has been held that, when the power to regulate rates for public service of a public corporation is deligated to a city, the City becomes invested with such power as a public trust and cannot divest itself thereof by contract.

Huron Water Co., *vs.* Huron (S Dak.) 30 L. R. A. 848.
Ogden City *vs.* Ogden Water Co. (Utah) 41 L. R. A. 305.

Again the state (and of course a city) cannot contract away its police power, or limit its exercise by contract, and this is conceded.

Bowman *vs.* R. R. Co. 125 M. S. 465.
Stone *vs.* Miss. 101 U. S. 814.
Butchers Co. *vs.* City Co., 111 U. S. 746.
Gas Co. *vs.* Light Co. 115 U. S. 50.
Mughler *vs.* Kans, 123 U. S. 624.
New York *vs.* Mila, 11 Peters, 139.

But it is denied that such a case is presented in the one at bar.

The matter of controversy in this case will first be treated from the standpoint of a contract, outside of the operation of the police powers of the municipality.

Treating the regulation of rates, as a matter of contract, it has been held that a "charter specification of rates which it shall be lawful for a turnpike Company to charge, subject to certain increase, or decrease, if necessary to keep the Company's dividends within certain limits, does not constitute an irrevocable contract between the State and the Corporation, but is merely an indication that such rates are supposed to be reasonable, without precluding the subsequent exercise of legislative power to change the rates."

Turnpike Co. *vs.* Croxton, (Ky.) L. R. A. 177.

See notes to this case for a genreal discussion.

In the case of Danville *vs.* Danville Water Co., (Ill.) 69 Am. St. Rep. 304, the Court held:

"The Legislature has the power to regulate the rates at which water shall be supplied to the public by a water Company,
421 especially where such right is reserved by the Statute under which said Company was incorporated.

"Municipal Corporations can exercise only such powers as are conferred upon them by their charters. All persons dealing with them must see that they have power to perform the proposed act.

"The Statute empowering a City to authorize a private corporation to construct water works, and to contract for a supply of water for a period not to exceed 30 years, gave no power to the City to bind itself by fixing a rate at which it must pay for such supply for such entire period, and an ordinance fixing the rates for the entire 30 years is void.

"Although a City has been empowered by Statute to authorize a private corporation to construct water works, and to contract f-r

a supply of water, not to exceed thirty years, a subsequent statute empowering any City in which a private corporation has been, or may be authorized to supply water for public use, to fix reasonable water rates, is constitutional, and an ordinance passed under the later statute reducing existing water rates, and fixing them at a reasonable price is valid, although the City enacting it has, under the earlier statute, attempted by ordinance to fix water rates at a certain figure for the entire unexpired period of 30 years."

Danville *vs.* Danville Water Co., 65 Am. St. Rep. 304.

"To the same effect see the decision in the case of Rogers Park Water Co., *vs.* Pergus, 178 Ill., 571, cited in note to the for-going case at page 315."

"It is there held that an ordinance fixing the rates for the full period is merely a declaration that such rates — reasonable at the time when the ordinance was enacted, and that the City is not bound to recognize such rates as reasonable for the full period, and has power to fix the water rates so as to make them reasonable at any time, or from time to time as changed conditions may effect
422 the reasonableness of the water rates formerly established, and that mandamus will lie at the suit of a citizen to compel the Water Company to furnish him with water at the changed rates, provided they are reasonable.

"In the case of San Diego Water Co., *vs.* San Diego from California, 62 Am. St. Rep. 261, the power to regulate water rates is recognized and enforced with the like qualification that they must be reasonable.

"The case of Rogers Park Water Co., *vs.* Pergus, cited above and of Danville *vs.* Danville Water Co., and also the additional case of Freeport Water Co., *vs.* Freeport all from the Supreme Court of Illinois, were taken by writ of error to the Supreme Court of the United States, and on March 25th, 1901, were affirmed.

21 Supreme Court Reporter, 490, 493, 505.

"In these cases the Supreme Court of the United States held that municipal corporations may be invested by statute with the power to bind themselves by an irrevocable contract and to regulate rates, but such power must be conferred in explicit terms, and that a contract concerning governmental functions, as one which affects the right of a city to regulate rates of a water Company, must be strictly construed, and such functions cannot be held to have been contracted away by doubtful or ambiguous provisions, and further than an ordinance granting an exclusive franchise to the Water Company with the right to use the streets, requiring the municipality to pay certain rentals, and binding the Company among other things, to furnish an adequate supply of water, does not give a contract right to change the rates named in the ordinance for the whole period of the franchise, by virtue of the provision that the grantee, "shall charge the following annual rates to consumers during the existence of this franchise," as this is merely a regulation of the right to charge rates, and does not amount to a stipulation that no other

regulation will be made during the term of the franchise."
423 It will be seen from the inspection of these cases that the Supreme Court was divided in opinion, the minority relying upon the cases hereafter cited by the defendant as controlling. The difference as we understand it, extends not only to the question of the power of the State to authorize an irrevocable contract but likewise whether the regulation of rates is within the police power.

In a very able and exhaustive argument, Counsel for the Water Company insists that the ordinance of March 30, 1901, impairs the obligations of prior contracts made by the City with the defendant Company, and is therefore void and in support of this contention are cited:

Constitution United States, Sec. 19, Art. 1.
Constitution State of Tenn. Sec. 20, Art. 1.
New Orleans Water Works Co., *vs.* Rivers, 105 U. S. 674.
New Orleans Gas Light Co. *vs.* Louisiana, 115 U. S. 650.
St. Tammany Water Works Co. *vs.* New Orleans Water Works Co., 120 U. S. 64.
Walla Walla *vs.* Walla Walla Water Co., 172 U. S. P. I.
Los Angeles Water Works Co., *vs.* Los Angeles, 177 U. S. 570.
St. Ann Water Co., *vs.* Town of etc., 56 Fed. Rep. 671.
Bank of Ill. *vs.* Akron City, etc. 76 Fed. Rep. 671.
Old Colony Trust Co. *vs.* City of Atlanta 83 Fed. Rep. 42.
Los *Los* Angeles City Water Co., vs. Los Angeles 88 Fed. Rep. 720.
City of Cincinnati *vs.* Cameron, 38 Ohio, 380.
Cable Co., *vs.* Baltimore, 66 Fed. Rep. 140.
Los Angeles Water Co., *vs.* City of Los Angeles 103 Fed. Rep. 711.
Crosby *vs.* City Council of Montgomery, 108 Ala. 498.
State *ex rel. vs.* LaClede Gas Light Co. 102 Mo. 472.

We do not deem it necessary to comment upon all these authorities, but will notice some of those most relied upon and most nearly in point.

The case of Los Angeles Water Company *vs.* Los Angeles 177 U. S. 570 is much relied on.

Attention is called to the fact that Justice McKenna, who delivered the opinion in the Los Angeles case above cited de-
424 livered the opinions in the Illinois cases, *supra*, and he rested it upon the *f*round that express authority has been granted to Los Angeles to enter into the contract limiting its power to regulate water rates. It is said on page 470 of the opinion, that "it is not denied that a City had the power to regulate rates."

The contract of July 22nd, 1868, with the Water Co., provided that the Mayor and Common Council of said City shall have, and do reserve, the right to regulate the water rates charged by said party of the second part, or their assignees provided that they shall not so reduce water rates or so fix the price thereof, as to be less than those charged by the party of the second part for water." pp. 560-570.

On April the 2nd, 1870, the legislature for California, passed an

act, held in that case to be void, ratifying and confirming said contract, pp. 561, 571. It is therefore held that since the City had entered into this contract by such legislative authority, and that the contract did not grant the power to regulate rates, which power was already existent, but was a contract to limit that right, the City had no power by ordinance to violate it.

"It will be further observed that this case arose under acts and contracts made before the adoption of the constitution of California, of 1879, providing for the regulation of water rates, pp. 567. In the case of the Old Colony Trust Co. *vs.* City of Atlanta, 83 Fed. Rep. 39, it is held that the City could not regulate streets car fares, because no such power had ever been delegated to the City. The City asserted such power under the provisions of its own charter, and also those of the charters of the Street car Companies, but the Court upon construing those charters, held that they granted no such power.

The Charter of the street car Company granted certain franchises and privileges to the Company, "provided that the rates and fares on said railroad shall be subject to the approval of the Mayor and City Council of the City of Atlanta." In the City Ordinance
425 granting to this Company the use of the streets etc., it was provided that the charges for passage on said road shall not exceed 20 cents for any through line, and 10 cents for half lines or short distances. The Court declines to express an opinion as to whether this constituted a contract between the City and the Company, but said that if the proviso in the railroad Company's charter granted any power to regulate it was exhausted upon its first exercise. But the Court does not determine what effect would be given to a direct gain of power to the City to regulate fares, instead of this mere reservation out of the franchise granted to the railroad Company, and further held that the power to approve, such as was reserved in this charter, is not equivalent to the power to regulate and fix rates. See page 42.

The case of Santa Anna Water Co. *vs.* Town of Buena Ventura, 56 Fed. Rep. 339, simply holds that the constitution of California of 1879, requiring annual regulation of water rates, would not avoid a valid contract previously entered into by a City with a water Company, authorizing the water Company to fix its own rates. The case has no application to the question involved in the present case.

The case of Walla Walla *vs.* Walla Walla Water Co., 172 U. S. 1, is a case somewhat peculiar in its facts.

By an act of the territory of Washington, incorporating the City of Walla Walla it was enacted that it should have power to provide a supply of water and to grant the use of the streets for a term not exceeding 25 years, provided that none of the rights and privileges herein granted shall be exclusive nor pervent the Council from granting the same rights to others.

The City in pursuance of this act, passed an ordinance in 1887, granting to the Company the right to lay, place and maintain all necessary water mains, pipes, connections and fittings in all
426 the highways, streets and alleys of the City for the purpose of furnishing water. In 1893 it passed another ordinance to

provide a system of Water works of its own and one of the questions presented was its power to pass the latter ordinance. The Court said: "The case upon its merits depends largely upon the power of the City under its charter. The ordinance authorizing the contract which purports to have been passed in pursuance of the charter, declared that until such contract be avoided by a court of competent jurisdiction, the City would not erect, maintain or become interested in any water works except the ones established by the Company, while the ordinance of June 20th, 1893, provided for the immediate construction of a system of water works by the City, for the purpose of supplying the City and its inhabitants with water. Upon the face of two ordinances there was a plain conflict, the latter clearly impa-red the obligation of the former. The City contended that the original ordinance was beyond its power to make, first, because it created a monopoly not authorized expressly or impliedly by legislative grant and was void as being in contravention of public policy. 2nd. That it was an attempt to contract away a part of the governmental powers of the City Council and for other reasons which we need not notice.

The Court held that as the original contract was limited to 25 years, and was not a- exclusive grant, that it was beyond the power of the City Council; that if it had been exclusive it would have been a monopoly and objectionable unless authorized by express sanction of the legislature.

The Court further held that the contract would be void if it interfered with the police power of the City and this police power extended to the peace, good order, health and morals of the inhabitants
427 and if de-terious to them it might be controlled by the City, or the contract entirely abrogated under the police authority of the City, but the Court held that the matter of the cont*a*rct did not fall within the police power but the contractrial power of the City.

In the case of the State *ex rel.* City of St. Louis *vs.* the La Clede Gas Co., 102 Mo. 472, 483, charter of the Company granted by the State authorize the Company to fix the price of gas manufactured by it, and it was held that such price could not be deminished by subsequent legislative action, state or Municipal. It was further held that the regulation of the price of gas by the state or by the municipalities created by it is not the exercise of a police power which cannot be abrogated by contract. It may be said that under the grant from the legislature in the Mo. case, it was intended to remove the Company from the exercise of the police power of the state over it, in so far as its rates of charge were concerned.

While not assenting to the views expressed in that case, we think this case clearly distinguishable from the present one under consideration in that the legislature in the Missouri case intended to put the question of rates beyond further control of the state or municipality and beyond its police regulations, while in the present case under Section 2 of the charter it was clearly intended to keep the question of rates under control and to treat them as subject to ploice supervisions.

Under the cases we have cited and others that might be collated,

it is, we think, apparent that the authorities are not agreed as to whether the state can by legislative grant empower a municipality to enter into an irrevocable and perpetual contract with a water company or other private or quasi public corporation for a system of water works and a supply of water, and whether such company can by legislative grant be removed from the supervision of the police power of the municipality, yet we think there is no question
428 but that in order to do so, the legislative grant must be unquestionable and admit of no other construction, but must be plain, positive and unequivocal. If the municipality has no such power under legislative grant, it can make no such contract nor can it waive its police powers or refuse to exercise them when the good of the citizens of the Municipality demands.

What matters fall within the scope of the police powers of the State or of a municipality, has never been definitely determined. A large number of subjects have been embraced, such as the public health, the public morals, the public safety and the general and comprehensive clause of the public welfare, and after the enumeration of all the subjects under these and other general heads the text books announce that there are also other instances. Different jurisdiction- lay down different rules and limits. In Theilan *vs.* Porter, 14 Lea, 626, "The safety and tranquil-ity of the community and the orderly existence of the government is included in the enumeration. As to what may be done under this power, see generally Dillon on Municipal Corporations, page 95, Section 71, N. 141, 142, 314, 752, note page 920. Ency. Law 1st. Ed. 620, 624. 18 Ency. of law 1st. Ed. 752. Harbison *vs.* Iron Co. 19 Pick. 423. Leper *vs.* State, 19 Pick. 503. Dayton *vs.* Barton, 19 Pick. 604. State *vs.* Martin, 2nd. Shannon, 555, L. & N. R. R. Co. *vs.* Burke, 6 Col. 50.

It was said in Stone *vs.* Mississippi, 101, U. S. 814: "No Legislature can bargain away the public health or the public morals."

While the rate to be paid for water is not so palpably a regulation within the police supervision of a City, as is the purity and supply of the water furnished, yet the rate of charge is a matter which affects the health, welfare and comfort of the City, since if rates are unreasonably high they will prove a restriction upon the use of water, which may seriously impair the health and interfere with the comfort and welfare of the people, especially the poorer classes,
429 who by reason of high prices, may be cut off from the benefit of the water, practically or altogether.

The case of Los Angeles City Water Co. *vs.* Los Angeles 88 Fed. Rep. 720, (same case, 177 U. S. 558) is relied on to show that a City may waive or renounce its rights to regulate water rates but as we have before stated, it appears that express authority was given to that City in its charter to enter into a contract limiting its power to regulate rates, the language of the charter being in substance that the City may regulate the rates, *provided they shall not so reduce such water rates or so fix the price thereof as to be less than those now charged by the parties of the second part* (the Water Co.) for water."

But the difference in that case and the present is, that by the charter of Los Angeles, the City has the express power to make an irrevocable contract while in this case the City of Knoxville is not by its charter granted such a right, but the proper construction of the charter is, we think, that the City shall have *a continuing right to regulate the charge for water limited only by a condition that such rates shall not be unreasonable and oppressive. As before stated, this question of reasonableness or unreasonableness of rates is not considered in the present case, but seems to have been waived* by consent.

It is said that it is unreasonable to give to the City of Knoxville the right to regulate the water rates of the Company when it is itself the principal party to be affected by such rates, and in this connection the Language of Mr. Justice Jackson in Cleveland Gas Light and Coke Co. against the City of Cleveland 71 Fed. Rep. 614 is cited as follows:—

"It would be a fearful proposition—monstrously absurd and outrageous, if the Legislature which undertook to confer upon a citizen of Cleveland, the right to say at what price services
430 should be rendered to him, or what he should pay for goods and articles furnished him. There is hardly any law in this land that would make the party being furnished, the judge of the price that he should pay, or would say his arbitrary decision should fix the rights of the parties. The City of Cleveland has undertaken to do that thing. The thing cannot be done and ought not to be done.

71 Fed. Rep. 614.

But the fallacy, as we think, in this argument lies in the fact that the question of the reasonableness or unreasonableness of the rates is always open to judicial investigation and while it may safely be said that the Legislature cannot constitutionally delegate the power to fix prices at which water shall be sold in a city to the authorities of the City, which is itself a consumer, either in its municipal capacity, or through its inhabitants without liability to a judicial investigation of the reasonableness of the rates fixed by such authorities. Still if no such provision is made in an ordinance, the law will imply one *and preserve to the Company its right to litigate the question upon the ground.* We do not think it necessary that the provision be incorporated in the contract or in the ordinance, but it will be implied when not expressly provided for.

It is said in addition that the City has an option to purchase the plant after 1898, and the argument is made that the City authorities by oppressive legislation and ordinances may make the plant unproductive and less valuable in order to secure it at less than it is worth, *but in answer to this, we think we can safely say the defendants may protect themselves against such action and result by a recourse to the Courts and protection against ordinances which are intended to, or do, have such results. No such case is before us now as the question of the income and profits of the Water Company*

has not been opened up nor considered and the naked question here, being the power to regulate the rates as the City in its
431 *judgment may deem right and just.*

Recurring again to the provision in the second section of the charter, Act, of 1877, Ch. 104, we think that its proper construction is, that nothing in it and no power granted *by it to the corporation to contract for and provide water shall in any way interefer- with the police or general powers* of the City and it expressly provides that such corporate authorities shall have power by ordinance to regulate the price of water to be supplied by such Company.

It is to be noted that defendants counsel insist that the proper construction of section 2 of the charter of the City is that, whole the City originally had the power to regulate the price of water to be supplied by the Company, it is not a continuing right, but that having once exercised it, its power was exhausted, and having once made a contract for a certain schedule of rates, it is bound by such contract. The contention is forcibly put as follows:—

The City was the "Master of the situation," if it chose to refrain from making a contract, it might exercise the power of regulation, limited only by what would be unreasonable and oppressive. But if it should exercise the power vested in it, and especially confer-ed upon defendant Company, and enter into a contract with said Company for the use of water and agree upon price for the use of such water then it became bound by that provision of the Constitution of the United States which is written into every contract, that it is sacred from alteration, change or imperiment except with the consent of the other party. And it is said:—if such were not the case what City could persuade parties to invest their capital in improvements, which to be profitable, must either be permanent or continue for such a length of time as to enable the investor
432 to recieve some return upon the amount invested by him. A different construction would be disasterous to the interests of the City.

In Freeport Water Co. *vs.* Freeport, 21 sup. court Rep. 498, it is said:—

(This power of regulation is a power of government contunuing in its nature and if it can be bargained away at all it can only be by words of positive grant, or something which is in Law equivalent. If there is reasonable doubt it must be resolved in favor of the existence of the power.)

In the words of Chief Justice Marshall, in Providence Bank *vs.* Billings, 4 Peters, 514, 561, L. Ed. 939, 955. Its abando-ment ought not to be presumed in a case in which the deliberate purpose of the state to abandon it, does not *appear. In that case the term used, was "at such rates as may* be fixed by ordinance. It was said, the words *"fixed by ordinance* may be construed to mean by ordinance once for all to endure during the whole period of thirty years or by ordinance from time to time as might be deemed necessary, of the two constructions that must be adopted, which is most favorable to the public not that one which would so tie the hands of the

Council that the rates could not be adjusted as justice to both parties might require at a particular time. The language of the city charter in the present case is not that the corporate authorities shall have power by ordinance *to fix,* but *to regulate* the price of water to be supplied by such Company, and in the same connection the full police and general powers of the corporation are reserved to it.

We are of the opinion that the right to regulate rates was not exhausted by an agreement at any particular time upon the schedule of prices, but it is continuing right under the terms of the charter, but not to be exercised arbitrarily and unreasonably, and when rates are so reduced as to become oppressive upon the Company, and so as not to yield a fair income on the inveatment, the Courts can interfere upon a proper showing and restrain such action.

433 As has been tersely said a reasonable rate the laws assures even against governmental regulations.

21 Sup. Ct. Reporter, page 497, Rogers Park Co. *vs.* Pergus.
21 Sup. Ct. Reporter, p. 498, Freeport Water Co. *vs.* Freeport.

The rates adopted by the ordinance are not shown by the proof to be unreasonable, and the ordinance is not shown to be oppressive, and its violation subjects the defendant to the penalties imposed.

The judgement of the Court below is reversed and judgement will be entered in this Court as herein indicated.

WILKES, *J.*

Office of the Clerk of the Supreme Court for the Eastern Division of the State of Tennessee.

I, Alex. McMillan, Clerk of said Court, do hereby certify that the foregoing is a true, perfect and complete copy of the opinion of said Court, pronounced at its September term 1901, in case of M. & A. of Knoxville against Knoxville Water Company, as appears of record now on file in my office.

In testimony whereof, I have hereunto set my hand and affixed the Seal of the Court, at office, in Knoxville, on this, the 27th, Dec. 1901.

[SEAL.] ALEX. McMILLAN, *Clerk,*
By J. G. STUART, *D. C.*

(Endorsements:) Opinion Tenn. Supreme Court, In water rates cases, Nov. 1901. No. 1260. In the U. S. *United* Circuit Court of Knoxville. Knoxville Water Company *vs.* M. & A. of Knoxville. Filed Jan. 15th, 1902. J. T. Carter, Deputy Clerk.

434 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

The general practice in regard to the production of documents, books and other writings, in the absence of a statute changing the common law, is pointed out in that part of Greenleaf on Evidence devoted to proceedings in equity at section 301 to 307, inclusive, and will be found re-stated in the case of Robbins *v.* Davis, Fed. Cas. No. 11,880. The general equity rule on the subject is no. 67, but this rule obviously applies to taking evidence in the ordinary case, where the witness resides within the district in which the Court is held, or at no greater distance than 100 miles from the place of holding the Court. Revised Statutes section 876. See also equity rule No. 78.

It is pointed out in Greenleaf on Evidence, at Section 305, that when documents, the production of which is desired, are in the possession of one who is not a party to the suit, he may be compelled to produce them by a *subpœna duces tecum*, and if the subpœna is not obeyed he will be punished for contempt, on proof, by affidavit, that the documents are in his custody. See also the same rule in 1 Beach on Modern Equity Practice, sections 525-526, and cases cited.

In the case now presented the right to obtain and inspect the books and accounts applied for must be regarded as somewhat doubtful, in view of the cases of Henry *v.* Travelers' Ins. Co., 35 F. R. 15; Boyd *v.* United States, 116 U. S. 616; Kelly *v.* Morrison, 173 Mass., 531; Morrow *v.* Fossick, 3 Lea 133; Davenbagh *v.* McKinnie,
435 5 Cowan (N. Y.) 27. See also 23 A. & E. Enclyc. of L., 3 Ed., pages 172-173, and cases there cited, and Victor G. Bloede Co. *v.* Joseph Bancroft & Sons Co., 98 F. R. 175.

According to the showing made by the petition, the books sought to be investigated can, in the very nature of the question, be of but little value, but this circumstance does not militate against the right to procure copies and inspect the books, if they have any bearing on the question, however remote this may be, and however slight the effect may be, as it undoubtedly will be.

The vital question in the case is what it would cost the plaintiff to duplicate the water plant and property now being used and devoted to the public supply of water. At a period of time back some years the market price may have been such that the plant cost twice what it ought to have cost, or again, the stringency of the money market may have been such that it did not cost half its real value, or again, the entire situation may have been such that the contractors were required to take doubtful securities as compensation for constructing the plant, which securities would have only a speculative

value, and in that way there might be a showing of a nominal cost, which would bear no practical relation whatever to actual market cash prices, and to such a sum as would have been sufficient to pay for the plant in cash, instead of speculative securities.

All in all, it is extremely doubtful, in view of the expense of obtaining copies of these books in the only way in which it can be legally done, if the testimony possesses any importance, in proportion to the cost and trouble of procuring same, but this is a question for the consideration of the defendant and its eminent counsel.

436 As the witness lives beyond the district in which the Court is held, and more than 100 miles from the place of the Court, it remains to be seen by what procedure the evidence of the witness may be taken, and an inspection, or copy, of any books and papers in his possession obtained. This method of procedure will be found fully discussed and explained in 1 Bates on Federal Equity Practise, sections 412-413 and 414, and 1 Foster's Federal Practice, 3 Ed., sections 285 to 290, and notes, where the sections of the Revised Statutes which specifically control this question, and thereby exclude any other method of procedure, will be found set forth and explained, and a reference to these books will suffice, without re-stating the rules, or the statutes, herein.

It is quite evident that under the sections of the Revised Statutes referred to by these text writers, and the decisions construing the same, that the only method by which the inspection and copy of the books sought for can be obtained is to have the Special Master go to a place within the district of the residence of the witness, in whose custody the books and papers are, and have him come before the Special Master under a *subpœna duces tecum*, or probably, if insisted upon, a subpœna from the Clerk of the United States Court, or of the Judge of the United States Court within the district of the witness' residence, must be had. As the procedure before the Special Master is defined by the rules of practice, and will be pursued by him it is, of course, not within the province of this Court to promulgate instructions as to this procedure taking place before the Special Master, or Master and Examiner.

It might be well, by an additional order, to make the Special Master in this case also Examiner, so that he will occupy in the case the position of both Special Master and Examiner.

437 Nor do I deem it necessary to undertake to define in any way the method by which the defendant must specify what parts of the plaintiff's books are desired, and for what purpose, in order that the witness may be protected in the rightful pos-ession and custody of his books in regard to matters that bear no relation to this law suit. All of these details the law contemplates the Special Master and Examiner will properly arrange under settled rules upon the subject, and by such rules adopt his own method of procedure in the premises.

The general pre-requisites to obtain production of books and papers, and the procedure in relation thereto, may be found stated in 23 A. & E. Encycl. of L., 2 Ed., pages 168-184, and the cases there collated, and cross references which may be seen.

(Signed) CLARK, *Judge.*

. Endorsed: No. 1260. In the U S. Circuit Court at Knoxville, Knoxville Water Co., against M. & A. of Knoxville, Opinion. Filed May 5, 1903, J. T. Carter, Deputy Clerk.
(Endorsements:) Opinion. May 5th, 1903.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

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KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

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438 Fed. Cas. No 11,880. The general equity rule on the subject is No. 67, but this rule obviously applies to taking evidence in the ordinary case, where the witness resides within the district in which the court is held, or at no greater distance than 100 miles from the place of holding the court. Revised Statutes section 876. See also equity rule No. 78.

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439 back some years the market price may have been such that the plant cost twice what it ought to have cost or again the

stringency of the money market may have been such that it did not cost half its real value, or again, the entire situation may have been such that the contractors were required to take doubtful securities as compensation for constructing the plant, which securities would have only a speculative value, and in that way there might be a showing of a nominal cost, which would bear no practical relation whatever to actual market cash prices, and to such a sum as would have been sufficient to pay for the plant in cash, instead of speculative securities.

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As the witness lives beyond the district in which the Court is held, and more than 100 miles from the place of the Court, it remains to be seen by what procedure the evidence of the witness may be taken, and an inspection, or copy, of any books and papers in his possession obtained. This method of procedure will be found fully discussed and explained in 1 Bates on Federal Equity Practice, sections 412, 413, and 414, and 1 Foster's Federal Practice, 3 ed., sections 285 to 290, and notes, where the sections of the Revised Statutes which specifically control this question, and thereby exclude any other method of procedure, will be found set forth and explained, and a reference to these books will suffice, without re-stating the rules, or the statutes, herein.

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It might be well, by an additional order, to make the Special Master in this case also examiner, so that he will occupy in the case the position of both Special Master and Examiner.

Nor do I deem it necessary to undertake to define in any way the method by which the defendant must specify what parts of the plaintiff's books are desired, and for what purpose, in order that the witness may be protected in the rightful possession and custody of his books in regard to matters that bear no relation to this lawsuit. All of these details the law contemplates the Special Master and Examiner will properly arrange under settled rules upon the subject, and by such rules adopt his own method of procedure in the premises.

441 The general pre-requisites to obtain production of books and papers, and the porcedure in relation thereto, may be found stated in 12 A & E. Encycl. of L., 2 Ed. pages 168-184, and the cases there collated, and cross references which may be seen.

CLARK, *Judge.*

Since writing the foregoing memorandum opinion a recent decision of the Supreme Court of the United States has reached me, and it is of such importance that I think I should call attention to it in this supplement to the memorandum opinion already filed.

The case referred to is San Diego Land & Town Co. *vs.* Jasper, Mss., Opinion by Mr. Justice Holmes, decided April 6th, 1903. In reference to the question here involved the learned Justice said:

"The main object of attack is the valuation of the plant.

(*a.*) It no longer is open to dispute that under the Constitution 'what the Company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public.' San Diego Land & Town Co. *v.* National City, 174 U. S. 739, 757. That is decided, and is decided as against the contention that you are to take the actual cost of the plant, annual depreciation, etc., and to allow a fair proffit on that footing over and above expenses. We see no reason to doubt that the California statute means the same thing. Yet the only evidence in favor of a higher value in the present case, is the original cost of the work, seemingly inflated by improper charges to that account and by injudicious expenditures, (being the cost to another company which sold out on foreclosure to the appellant), coupled with the recurrence to testimony as to the rapid depreciation of the pipes. In this way the appellant makes the value over a million dollars. No doubt cost may be considered, and will have more or less importance according to circumstances. In the present case it is evident for reasons some of which will appear in a moment that it has very little importance indeed."

* * * * * * *

"Then by the arrangement of the stockholders who were willing to go on, the mortgage was foreclosed and all the property was sold to those stockholders for the normal sum of $889,163.33,

442 which was equal to the amount of outstanding certificates and bonds, and was paid by turning them in. This was in 1897, a few months before the passage of the ordinance complained of. The purchasers organized the present corporation, and the above mentioned sum is the cost — the land and the water works to it. The appellant protests that this is not a fair value for the property of the company. We doubt whether it is not a liberal allowance. The officers of the two companies at the time thought that they got more than they could have got in any other way. But at all events, it is decided that the price is evidence, we might say more important evidence than the original cost. Dow *v.* Beidelman, 125 U. S. 680. If the supervisors were convinced by it we certainly could not say, as matter of law, that they were wrong. Of course, as we indicated the *the* other day in Knoxville Water Co. *v.* Knoxville, if an attempt had been made to cut down values by the reduction

of rates the courts would know how to meet it. But there is nothing of that sort in this case. The valuation of property for the purposes of taxation may not be technical evidence in a court of law, yet it may be considered in coming to a decision whether the action of the supervisors was unfair, especially if, as was testified, it was sworn to by the officers of the Company. The total valuation for 1897 was somewhat less than the price got at the sale, and that of the plant was $155,000.00."

B. In understanding rightly this case in its application, it will be observed, of course, that original cost had reference to what the plant cost one of the parties to the law suit, and not what it may have cost some third party, who may at one time have been owner of the same property.

Another point of distinction is that the case just decided by the Supreme Court of the United States the company itself was contending for the original cost to it as a standard, or test, of the present value of the plant, while apparently just the reverse of this is the position taken in the case at bar.

In the case at bar the City of Knoxville is insisting upon the original cost as a test, or an important test of the present value of the plant devoted to public use, while the plaintiff Water Company is contending that the original cost, and quite certainly the original cost to some other owner than itself, possesses very little, if any, importance in its bearing on the question of the present value of the plant. So that the contentions of the respective parties are
443 exactly reversed in the case at bar, when contrasted with the case of San Diego Land and Town Co. *v.* Jasper, just decided by the Supreme Court of the United States.

The point of practical value brought out by Mr. Justice Holmes in the opinion, is that while original cost may be considered it never-the-less is, or may be, in a given case, of practically little, or no consequence in determining the present value of a plant devoted to public use, and the opinion brings out the proposition which I announced in the memorandum opinion heretofore filed, and which has been often declared by the same Court in other cases, and in state courts of high authority, namely, that the real question at issue in a case involving taxation, or regulation, is the present value of the plant, or property, being used and devoted to public use.

C. For the use of counsel I attach to this memorandum opinion, and send with it, the advance sheets of the opinion, which is made the basis of the comments contained in this supplement.

I have heretofore sufficiently referred to the procedure by which to obtain this testimony, the most accurate statement of the practice being found in the section referred to in Bates on Federal Procedure, and the duty of the commissioner or special master, is fully stated in section 413, and the procedure before him is in particular defined in the last paragraph of the section just cited, which relates to the method in which the commissioner shall cause to be made and furnished copies of any books, or papers, which may be required to be produced before him in due course of practice.

(Signed) CLARK, *Judge.*

444 (Endorsements:) No. 1260. In the U. S. Circuit Court, at Knoxville. Knoxville Water Company, *vs.* Mayor & Aldermen of Knoxville. Supplemental Opinion. Filed May, 16th, 1903. J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

Defendant has set out in a petition to the Special Commissioner and Examiner two questions which it desires settled, and complainant has answered that petition. Both have been filed in the cause, and it is unnecessary to repeat the contents here.

The first of these questions, *i. e.*, the one concerning the Wheeler & Parks books, has been submitted to the Hon. C. D. Clark one of the Judges of this Court. He has filed in the cause an opinion and supplemental opinion, not decisive, but indicating that he does not consider the proof desired as having any bearing. I need not make a statement of the case. I am only indicating to counsel my views, and they fully understand the situation.

In the very recent case of San Diego Land & Town Co. *v.* Jasper, by Mr. Justin Holmes, is the following language:—

445 "The main object of attack is the valuation of the plant. It no longer is open to dispute that under the constitution what the Company is entitled to demand in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public. That is decided, and is decided as against the contention that you are to take the actual cost of the plant, annual depreciation, etc, and to allow a fair profit on that footing over and above expenses. We see no reason to doubt that the California Statute means the same thing. Yet the only evidence in favor of a higher value in the present case, is the original cost of the work, seemingly inflated by improper charges to that account and by injudicious expenditures (being cost to another company which sold out on foreclosure to appellant) coupled with a reference to testimony as to rapid depreciation of the pipes. In this way the appellant makes the value over a million dollars. *No doubt cost may be considered and will have more or less importance according to circumstances.*"

In the present case it is evident for reasons, some of which will appear in a moment, that it has very little importance indeed.

In the opinion filed by Judge Clark it is clearly shown that this case differs from perhaps all cases of this character, inasmuch as complainant has based its case strictly upon a present inventory value, setting out the items in great detail, with the value put upon each. In other cases complainants have asked consideration for the cost of their property. In those cases the authorities say what is un-

derscored above. If complainant abandons all claims by reason of cost the matter is one of no interest to defendant. Complainants could never be held to a valuation less than the present fair value.

Counsel for defendant has insisted on this contention with great earnestness. Irrelevant testimony in a case like this could do no injury, but the exclusion of revelant testimony might. It is therefore with much reluctance that I exclude anything which counsel look upon as necessary to their side of the case.

446 It must be true that dozens of men in Knoxville, not necessarily hydraulic engineers, but ordinary contractors and builders, can take up the schedules of values prepared and exhibited by complainant and give intelligent testimony as to whether the values fixed therein are fair values.

Cost would be the poorest test of value; supposing it ascertained after great labor and expense. We must then go to the plant itself to see if the cost be too much or too little. This brings us right where we started.

The contracting firm of Wheeler & Parks is not a party to this suit, and they object vehemently to the production of their books and papers, and beleiving there is no doubt but the value of the investment will be fixed not by cost, but by the testimony as to the value of the plant as it stands, I cannot bring myself to decide this question otherwise than against the defendant.

Upon the second question in the petition, complainant has in its evidence submitted the annual amount of its operating expenses since 1884, and the defendant now asks that its expert be permitted to examine the vouchers and items thereof.

I have ruled that the most rigid examination of the expense account, and the vouchers thereof, will be permitted for the year in which the ordinance attacked, was passed, for all subsequent and for one year previous, in all three years and six months. I do not consider that the expenses of complainant for any year previous to the passage of the ordinance have any bearing, as the question is, will the rates fixed by the ordinance yield a fair income on the in-

447 vestment, after paying expenses? What happened in previous years is not material. For the comparison of expenses, to test complai-ant's figures, the items of one previous year have been required. Defendant claims that items might have been put to betterment account which belonged to expense. If so it would add nothing to the physical property.

It follows that complainant will not be required to exhibit its books and papers showing operating expenses beyond what has already been required.

As applicable to both of the questions raised:—

Some claims are based on the rulings heretofore made by me. I do not think what I have said here is inconsistent with any former ruling, but it is not material, I should be willing to change at any time,—justice seemed to require it.

Both Wheeler & Parks and complainant in this cause are entitled to the privacy of their books and papers, unless it can be affirmatively shown that some information therein is material to the issues

in this suit. Defendant cannot have open access thereto in the hope that something might be found.

HENRY O. EWING,
Special Commissioner & Examiner.

(Endorsements:) No. 1260. In the United States Circuit Court. at Knoxville Knoxville Water Company. against Mayor & Aldermen of Knoxville. Opinion of Special Master. Filed Jun- 29 1902. J. T. Carter, Deputy Clerk.

448 Supreme Court of Tennessee, at Knoxville. September Term, 1887.

TUESDAY, *October* 21, 1887.

Court met pu-suant to adjournment,

Present and presiding the Hon. Chief Justice Peter Turney and Asso. Justice W. C. Folkes, W. C. Caldwell, H. H. Lurton and D. L. Snodgrass.

The minutes of yesterday were read and signed and the following business transacted:

M. & A. OF CITY OF KNOXVILLE
vs.
KNOXVILLE WATER COMPANY.

Petition to Rehear.

In this cause complainant files a petition and enters a motion for a rehearing.

WEDNESDAY, *October 26th*, 1887.

KNOXVILLE WATER COMPANY
vs.
THE M. & A. OF CITY OF KNOX-.

Decree.

Be it remembered that this cause came on to be heard on the 18th day of October, 1887, before the Supreme Court of Tennessee, at Knoxville, upon the transcript of the record from the Chancery Court of Knox County, and the original papers sent up to this Court by consent of parties to-wit:—Exhibit "B" to the deposition of F. M. Lowree. Exhibit No. 2 to cross examination of J. S. Vangilder. Exhibits No, 1, 2, 3, 4, & 5 to the deposition of A H. Martin and the assignments of errors filed by the defendant. And the Court being of opinion that none of the eleven different assignments of errors are well taken, and that the decree of the Chancellor is in all things correct. The Court is therefore pleased to order, adjudge and
449 decree that said decree of Chancellor, be and the same is hereby in all things affirmed. And it appearing to the Court

that on the 4th day of August 1886 the Chancery Court of Knox County, rendered a decree against the defendant the Mayor and Aldermen of the City of Knoxville in favor of complainant the Knoxville Water Co., for the sum of Eight Thousand seven hundred and seventy five and 86/100 ($8775.86) hydrant rental and interest thereon, accrued under the contract filed in this cause as Exhibit "A" to the deposition of F. M. Lowree to the quarter ending June 4th, 1885 from which decree an appeal was prosecuted to this Court.

And it appearing to the Court that defendant executed an appeal bond in the penalty of Ten thousand dollars, conditional as required by law with Cullen & Newman a firm composed of C. Cullen and C. S. Newman, S. T. Logan, W. C. Perry, Isham Young: J. F. Horn & Bros, a firm composed of J. F. Horne and W. A. Horne, James McAffrey, Ignaz Fanz, Wm. Caswell, James C. Luttrell, Jno. S. Van Gilder; Lucky & Yoe, a firm composed of C. E. Lucky and J. W. Yoe: Washburn and Templeton, a firm composed of W. P. Washburn and Jerome Templeton, Peter Kern, G. W. Adney and S. B. Luttrell sureties thereon. And it appearing that the interest on said decree to this date amounts to the sum of Six hundred and thirty four and 95/100 dollars ($635.95) which with the principal makes the sum of Nine thousand Four hundred and ten and 81/100 dollars ($9410.81). It is therefore decreed by the court that Complainant, the Knoxville Water Company, have and recover of the defendant the Mayor & Aldermen of the City of Knoxville and Cullen and Newman a firm composed of C. Cullen and C. S. Newman, S. T. Logan, W. C. Perry, Isham Young, J. F. Horne & Bros. a firm composed of J. F. Horne and W. A. Horne James McAffrey, Ignaz Fanz, Wm. Caswell James C. Luttrell, Jno. S. Vangilder,
Lucky & Yoe, a firm composed of C. E. Lucky and J. W.
450 Yoe, Washburn & Templeton, a firm composed of W. P. Washburn and Jerome Templeton, Peter Kern, G. W. Adney, and S. B. Luttrell sureties on the appeal bond, said sum of Nine Thousand four hundred and ten and 81/100 dollars and all the cost of said appeal for which execution may issue. It is further decreed by the Court that the defendant Mayor & Aldermen of the City of Knoxville, pay all the costs of the Court below for which execution may issue. By consent of all parties the Court further decrees that the Clerk of this Court upon being requested so to do return to the Clerk and Master of the Chancery Court of Knox County, all the original papers sent up with the transcript and he shall take his receipt for such pape[illegible] and file the same with the transcript in this cause. This decree was made and should have been entered on the 18th day of October, 1887, and is entered *nunc pro tunc.*

WEDNESDAY, *October 26th*, 1887.

KNOXVILLE WATER COMPANY
vs.
THE M. & A. OF THE CITY OF KNOXVILLE.

Be it remembered that this cause came on to be further heard before the Supreme Court of Tennessee upon all the proceedings heretofore had in this cause, but more especially upon the petition filed by the defendant to rehear this cause and the answer thereto. And the Court being of the opinion that there is no merit set up in the defense made by defendant to the suit of complainant and that this is for that reason not a proper case to rehear, the Court is pleased to so decree, and to decree that said petition to rehear be and the same is hereby dismissed, and the defendant and its sureties on the appeal bond pay all the costs accrued on said petition to rehear,
451 for which execution may issue.

Office of the Clerk of the Supreme Court for the Eastern Division of the State of Tennessee.

I, Alex McMillan, Clerk of said Court, do hereby certify that the foregoing is a true, perfect and complete copy of the decree, motion etc., of said Court, pronounced at its September Term 1887 in case of Knoxville Water Company against M. & A. of the City of Knoxville.——as appears of record now on file in my office.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of the Court, at office in Knoxville on this, the 6th, day of Jan'y 1904.

[SEAL.] ALEX McMILLAN, *Clerk*,
By J. G. STUART, *D. C.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company, against Mayor & Aldermen of the City of Knoxville. Copy of the decree in Supreme Court of Tenn. in case of Knoxville Water Co. *vs.* M. & A. of Knoxville. Filed Jan. 14, 1904. J. T. Carter, Deputy Clerk.

MONDAY, *September* 12, 1904.

Be it remembered, that at a Circuit Court of the United States begun and held for the Northern Division of the Eastern District of Tennessee, at the Federal Court rooms in the City of Knoxville, within said district, and the Sixth Circuit, on the second Monday, it being the 12th day of September, A. D. 1904, the following proceedings were had, to-wit:

There being no judge of said Court present, the Court was regularly opened by Richard W. Austin, United States Marshall for the Eastern District of Tennessee, and thereupon the Court was adjourned by said marshall until tomorrow morning at nine o'clock.

TUESDAY, *Sept.* 20, 1904.

Court met pursuant to adjournment; present and presiding the Hon. C. D. Clark, Judge, etc.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
THE CITY OF KNOXVILLE.

Order.

452 In this cause the defendant is allowed on motion to refile its exceptions heretofore filed to the Master's draft of his report as its exceptions to the Master's report on file in this cause and it is ordered that said defendant's exceptions stand as defendant's exceptions to said report, to which action of the Court Plaintiff Knoxville Water — duly excepted at the time.

(Endorsements:) In the U. S. Circuit Court at Knoxville. Knoxville Water Co. against M. & A. of Knoxville. Order. Ent'd. Journal S. p. 2. Filed 20 day of Sept. 1904. J. T. Carter, Deputy Clerk.

TUESDAY, *December* 1, 1904.

Court met pursuant to adjournment. Present and presiding the Hon. C. D. Clark, Judge, etc.

U. S. Circuit Court, Northern Division, Eastern District Tenn.

In Equity. # 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF CITY OF KNOXVILLE.

Order.

In this cause, on motion of plaintiff, it is permitted by the Court to amend its bill herein, so as to charge that the fair value of the property of plaintiff within the City of Knoxville, as of date March 30th, 1901, exceeds $1,000,000. and has constantly increased in value at all times since said date, which said property of said value was at said date and at all times since used in the public service for the purpose of supplying said City with water and that the effect of the ordinance of March 30th, 1901. of defendant reducing the water rates of plaintiff if enforced is to deprive plaintiff of a
453 fair and reasonable return upon its said value of said property so used, and for that reason said ordinance is unconsti-

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tutional and void. The said amendment is allowed, as though made by interlineation on the face of said bill.

Ebter this.

CLARK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuir Court at Knoxville, Knoxville Water Company. against Mayor & Aldermen of Knoxville. Order allowing amendment to Bill. Ent'd. Journal S. p. 30. Filed 1st, day of Dec. 1904. J. T. Carter, Deputy Clerk.

SATURDAY, *Dec.* 10, 1904.

Court met pursuant to adjournment. Present and presiding the Hon. C. D. Clark, Judge, etc.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
M. & A. OF THE CITY OF KNOXVILLE.

Order.

In this cause it appears that the order of reference erroneously states that it was made by consent of parties, and it is ordered that the same be and is corrected, by striking out and annulling
454 the phrase therein "by consent of parties," as having been inadverdently inserted.

It is firther ordered that the record show that the parties waived objection to the appointment of the Clerk as Special Commissioner to state the account, which is accordingly done.

It is further ordered that the record show that when the case was called for hearing the defendant announced ready for trial, and that the order of reference embracing the eleven propositions was thereupon submitted by the plaintiff, before any proof has been taken, and that the Defendant took exception to some of the propositions submitted and submitted other and additional propositions, all of which were submitted by the parties for the Court's action, who thereupon added section 12 to the original order of reference.

And thereupon the defendant, pursuant to said section 12, filed the additional sections to the order which are found in the record.

Upon a controversy arising as to the admission of evidence the Court struck out section 12 of the order of reference, and substituted in its place the order found on file in the record.

This order is made *nunc pro tunc,* for sufficient reasons appearing to the Court.

Enter this.

CLERK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company, against Mayor & Aldermen of the City of Knoxville. Order Correcting Order of Reference.
455 Ent'd Journal S, p. 31. Filed 10 day of Dec. 1904. J. T. Carter, Deputy Clerk.

THURSDAY, *December* 29, 1904.

Court met pursuant to adjournment.
Present and presiding, the Hon. C. D. Clark, Judge, etc.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMEN OF KNOXVILLE.

In this cause, after consideration of defendant's demurrer to the amendment allowed to Plaintiff's Bill herein, on Dec. 1st, 1904, and to said Bill as amended, the Court being of the opinion that said Demurrer is not well taken doth therefore order and decree that said Demurrer be, and the same is hereby over-ruled.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company against Mayor & Aldermen of the City of Knoxville. Order over-ruling Demurrer to amendment to Bill. Ent'd Journal S, p. 36. Filed 29 day of Dec. 1904. J. T. Carter Deputy Clerk.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
v.
THE CITY OF KNOXVILLE.

456 Supreme Court of Tennessee, at Knoxville, September Term, 1901.

THURSDAY, *November* 7, 1901.

Court met pursuant to adjournment.
Present and presiding the Hon. Chief Justice D. L. Snodgrass, and the Hon. Associate Justice- W. C. Caldwell, John S. Wilkes, W. K. McAllister and W. D. Beard.
The minutes of yesterday were read and signed, when the following proceedings were had to-wit;—

MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE
vs.
KNOXVILLE WATER COMPANY.

Reversed.

This cause came on to be heard on this the 7th, day of November 1901, before the Honorable, the Judges of the Supreme Court of Tennessee, sitting at Knoxville, on the transcript of the record from the Circuit Court of Knoxville, the assignments of error on behalf of plaintiff in error, Mayor and Alderman of the City of Knoxville, the reply thereto by the defendant, Knoxville Water Company, and the briefs and argument of counsel, from all of which the Court is of the opinion that the ordinance of March 30th, 1901, upon which this suit is based is not in contravention or violation of the Constitution of the United States, Article I, section 10, or of Section 1 of the 14th, amendment to said Constitution, but that said ordinance is a valid and legal ordinance and was properly passed under the power and authority invested in plaintiff, that its publication in a Sunday edition of a Newspaper under authority of plaintiff was a valid and legal publication of said ordinance as required by the charter of the plaintiff, and that the defendant is guilty of the violation of said ordinance as charged in the warrant issued in this case, and that there is therefore error in the judgement of the Circuit Court of Knox County, adjudging the invalidity of said ordinance and dismissing plaintiff's suit, and said judg-
457 ment is therefore reversed, and judgment will be entered here in favor of plaintiff, but without prejudice to defendant's right to litigate and show in such way as it may be advised that the rates prescribed by said ordinance of March 30th, 1901, are unreasonable and oppressive—that question not having been considered by the Court in deciding this case.

It is therefore considered by the Court that plaintiff have and recover of the defendant the penalty of Ten Dollars as provided for in said ordinance of March 30th, 1901, together with all the costs of this suit accrued in this Corut and in the lower Courts, for which execution may issue.

To the ruling and holding that the ordinance of plaintiff Mayor & Alderman of the City of Knoxville, upon which this suit is based is not in contravention or violation of the Const-ution of the United States, as aforesaid, the defendant Knoxville Water Company saves its exceptions.

Supreme Court of Tennessee, at Knoxville, September Term, 1901.

Court met pursuant to adjournment.

Present and presiding the Hon. Chief Justice D. L. Snodgrass, and the Hon. Associate Justices W. C. Caldwell, John S. Wilkes, W. K. McAllister and W. D. Beard.

The minutes of yesterday were read and signed, when the following proceedings were had, to-wit:—

MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE
vs.
KNOXVILLE WATER COMPANY.

The Assignment of Errors for the Supreme Court of the United States.

The defendant, Knoxville Water Company, by its attorney further excepts to the action and judgment of the Supreme Court of the State of Tennessee, sustaining the validity of the ordiannce of plaintiff, passed March 30th, 1901, being the ordinance in controversy in this cause, and holding that the same is not valid and refusing to hold that said ordinance is in contravention and violation
458 of the Constitution of the United States, Article 1, Section 10, and Section 1 of the 14th, Amendment of said Constitution, as contended by defendant in its pleas, in its reply to plaintiff'- assignments of error to the Supreme Court of Tennessee, and in the oral argument of its Counsel before said Supreme Court, all of which defendant assigns as error upon said judgment.

Office of the Clerk of the Supreme Court for the Eastern Division of Tennessee, at Knoxville.

I, Alex McMillan, Clerk of said Court, do hereby certify that the for-going is a true and correct copy of the decreC and order of assignment of errors, pronounced by said Court, at its September term, 1901, in the case of M. & A. of Knoxville *vs.* the Knoxville Water Co., as the same appears of record and on file in my office.

In testimony whereof, I have hereunto set my hand and affixed the seal of the Court, at office, in Knoxville, on this the 19th, day of November, 1901.

ALEX McMILLAN, *Clerk*,
By J. G. STUART, *D. C.*

(Endorsements:) Certified Copy of Judgment of Supreme Court of Tennessee in M. & A. of Knoxville, In error, *vs.* Knoxville Water Co. No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Co. *vs.* M. & A. of Knoxville. Filed Jan. 15th 1902. J. T. Carter, Deputy Clerk.

459 MONDAY, *September* 9, 1901.

Be it remembered that at a Circuit Court of the United States began and held for the Northern Division of the Eastern District of Tennessee, at the Federal Court rooms, in the City of Knoxville within said district and the Sixth Circuit on the second Monday, it being the ninth day of September, A. D. 1901; present and presiding the Hon. C. D. Clark, District Judge for the Eastern and Middle District of Tennessee, the following proceedings were had, to-wit:

SATURDAY, *February* 1, 1902.

Court met pursuant to adjournment, presiding at chambers at Chattanooga, the Hon. C. D. Clark, Judge, etc.

459½ In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

THE KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

This cause was heard before the Hon. C. D. Clark, Judge etc. upon the record and more especially upon the plaintiff's application for a preliminary injunction, and argument of counsel having been heard, and the motion having been duly considered, and the court being of the opinion that the motion of the plaintiff, Knoxville Water Company for an injunction prohibiting the Mayor & Alderman of the City of Knoxville from enforcing an ordinance passed by said Mayor & Aldermen March 30, 1901, regulating water rates, also an ordinance passed Octobe- 4th, 1901, regulating water rates, until further order of the Court should be granted, it is so ordered, adjudged and decreed, and a preliminary injunction will be issued pursuant to the prayer of the plaintiff's bill in this cause, strictly commanding and enjoining the Defendant, Mayor & Aldermen of the City of Knoxville, its officers, agents, servants and attorneys, under the pains and penalties which may fall upon them, and each of them, in case of disobedience that they forthwith, and until the further order, judgment and decree of this court desist from enforcing or attempting to enforce either of the aforesaid ordinances.

460 But it is further adjudged that as a condition, to the issuance of said injunction the plaintiff execute bond in the sum of Ten Thousand ($10,000.00) Dollars, in favor of the Defendant in name, and for the use and benefit of the Defendant so far as its rights may be concerned, and for the use and benefit of consumers of water, and conditioned to abide by and perform the judgment of the Court on final hearing, and in the event the plaintiff fails in this suit to pay into Court all, or such portion of such bond as may be required by order of the Court, for the purpose of paying to the Defendant City any excess charges made, in order that such excess charges may be refunded to those who pay the same pending the litigation.

Said bond will be executed with sureties so that the Deputy Clerk of this Court at Knoxville will certify that the same is good.

And now a bond having been executed by the plaintiff in compliance with the terms of this decree, and having been approved and certified by said deputy Clerk, at Knoxville, said injunction will issue forthwith.

Enter this.

CLARK, *Judge.*

O. K.
PICKLE & TURNER.

(Endorsements:) No. 1260. In the Circuit Court at Knoxville. Knoxville Water Company. *vs.* Board of Mayor & Aldermen of Knoxville. Decree Allowing Inj. Ent'd. Journal R. p. 445. Filed 1 day of Feb., 1902. J. T. Carter, Deputy Clerk. Filed Jan. 29, 1902. J. T. Carter, D. C.

461 UNITED STATES OF AMERICA, *Eastern District of Tennessee:*

Circuit Court of the United States for Said District at Knoxville.

To the Marshall of the Eastern District of Tennessee, Greeting, and to The Mayor & Alderman of the City of Knoxville and to their Counselors, Attorneys, Solicitors, and agents and each and every of them, Greeting:

Whereas, The Knoxville Water Company has lately filed its bill of complaint in said Circuit Court of the United States at Knoxville, against you, the said Mayor & Alderman of the City of Knoxville, to be relieved touching the matter set forth in said bill in which it is charged that, your actings and doings in the premises, are contrary to equity and good conscience: and whereas, the Honorable C. D. Clark, Judge of the District Court of the United States in said District, has ordered that an injunction issue as prayed by complainant.

Therefore, in consideration of said fiat, and of the particular matters in said Bill set forth, you, the said Mayor & Alderman of the City of Knoxville, and the persons before named, and each and every of you, are hereby strictly commanded and enjoyned, under the penalty of a contempt of Court, that you do absolutely desist and refrain from enforcing an ordinance passed by the Board of Mayor & Alderman of the City of Knoxville March 30th, 1901, regulating water rates, also an ordinance passed Oct. 4th. 1901, regulating water rates, and from enforcing or attempting to enforce either of the aforesaid ordinances, until further order of said court in the premises.

Witness the Honorable Melville W. Fuller, Chief Justice
462 of the Supreme Court of the United States, at Knoxville in said District, this, 1st, day of February, A. D. 1902.

[SEAL.] HENRY O. EWING, *Clerk,*
By J. T. CARTER, *Dep. Clerk.*

(Endorsements:) No. 1260. Injunction. In the United States Circuit Court at Knoxville Knox. Water Co., *vs.* M. & A. of the City of Knoxville. Issued, 1 day of Feb., 1902. H. O. Ewing, Clerk. By, J. T. Carter, D. C. Marshall's Cost. 1 service $2.00 Filed Feb. 18, 1902. J. T. Carter, Deputy Clerk.

Came to hand same day issued, Executed as commanded by making known the contents of the within writ to Joseph T. McTeer, Mayor, City of Knoxville, This Feb. 17, 1902.

L. M. PARKER,
Office Deputy Marshal.

463 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMAN OF KNOXVILLE.

The motion to stay the further progress of this case until the question now before the Supreme Court of the United States, between the same parties, and in relation to the same subject, shall have been disposed of is for the present denied.

It seems altogether fitting that in a case of this magnitude, and in relation to a serious and somewhat novel question, I should express in the form of a memorandum opinion more at large, the views which I entertain, and the grounds on which this ruling proceeds.

It has come to pass, however, that if this Court puts on public file in the Knoxville office an opinion in relation to a subject in the simplest terms and in the briefest form it is liable to be made the bases of associated press dispatches from certain quarters sent broadcast over the country, containing grotesque misrepresentations in regard to the real action of the Court, and such as, when read, would strike even the ordinary mind as ludicrous in the extreme, to say nothing of the way in which they would strike the trained legal mind.

In view of this I feel that it is but justice to the Court that its decisions should, if possible, be announced in a way that will avoid such misrepresentations.

I have full notes of the case as made during the examination of the question, which suggest also the course of reasoning on which the judgment proceeds, which I will gladly furnish counsel
464 on each side for their personal inspection, if desired.

(Signed) CLARK, *J.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Co. *vs.* M. & A. of Knoxville. Opinion on staying case. Filed Jun- 6 1902. J. T. Carter, Deputy, Clerk.

MONDAY, *September* 8, 1902.

Be it remembered, that at a Circuit Court of the United States began and held for the Northern Division of the Eastern District of Tennessee, at the Federal Court rooms, in the City of Knoxville, within said district and the Sixth Circuit, on the second Monday, it being the eighth day of September, A. D. 1902; present and presiding the Hon. C. D. Clark, Judge of the District Court of the United States for the Eastern and Middle Districts of Tennessee, the following proceedings were had, to-wit:

MONDAY, *October* 6, 1902.

Court met pursuant to adjournment, presiding at chambers in Chattanooga, the Hon. C. D. Clark, Judge, etc.

465 No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

This cause by consent of parties and for special reasons appearing to the Court is referred to H. O. Ewing as Special Master, who is ordered to hear all proofs offered by plaintiff and defendant and to report to this Court as follows:

First.

The amount invested by plaintiff in its entire plant and property.

Second.

The amount invested in the corporate limits in the City of Knoxville, including machinery, apparatus, and all appliances and property of every kind used in the operation of the Water plant within said corporate limits.

Third.

The amount and character of plaintiff's indebtedness and the property covered by it on March 30th, 1901.

Fourth.

The value of plaintiff's entire plant and property at the time of the passage of the ordinance of March 30th, 1901.

Fifth.

The actual value of the plant and property within the corporate limits of the City of Knoxville, including the machinery, apparatus and all appliances and property of every kind used in the operation of the plant within said corporate limits when the ordinance of March 30th, 1901, was passed.

Sixth.

The gross revenue derived by plaintiff from its entire water plant and property under the rates in effect prior to March 30th, 1901, and how much same would be reduced by said ordinance of March 30th, 1901.

Seventh.

466 The total revenue derived by plaintiff from water supplied within the corporate limits under rates in effect prior to March 30th, 1901, and how much same would be reduced by said ordinance of March 30, 1901.

Eighth.

An itimized statement of plaintiff's expense per annum and what part of same pertains to the property within the corporate limits of the City.

Ninth.

The extent and kind of investigation made bt Defendant before the passage of the ordinance of March 30th, 1901, the notice given to plaintiff, when and by whom.

Tenth.

What would be a fair amount to allow annually for depreciation of the water plant and property of plaintiff from natural causes and by wear and use and depreciation accrued to March 30 1901.

Eleventh.

Whether or not the rates fixed by Defendant's oedinance of March 30th, 1901, are reasonable and would afford or permit a reasonable income on the capital invested in its plant and property by plaintiff.

The MasBer will take proof with all reasonable dispatch and will, if possible, file his report in time for action at the next term of this Court.

Twelfth.

The Special Master will report on any other special matter on question about which he is specifically requested to report by either side in writing within 10 days after entry of this order said requests to be filed and made part of the record. In case an irrevelant or unnecessary inquiry is opened up by such request the costs thereof will be taxed against the party making such request and the Master will report what if any needless costs are thus caused.

Enter this. CLARK, *Judge.*

467 (Endorsement:) No. 1260. In the U. S. Circuit Court at Knoxville Knoxville Water Co. *vs.* The M. & A. of the City of Knoxville Order of Reference. E't'd Journal R. p. 515 6 day of Oct. 1902 J. T. Carter, D. C.

FRIDAY, *November* 21, 1902.

Court met pursuant to adjournment.
Present and presiding the Hon. C. D. Clark, Judge, Etc.

468 In the Circuit Court of the United States for the Northern — of the Eastern District of Tennessee.

KNOXVILLE WATER COMPANY
v.
THE MAYOR & ALDERMAN OF THE CITY OF KNOXVILLE.

Substituted Paragraph No. 12.

In taking the evidence and directing the inquiry before him, the Special Master possesses the usual power of Masters in Chancery, and is hereby expressly invested with power and authority to determine what subjects are relevant and pertinent matters of inquiry under the foregoing order of Reference, and also the proper method of proceeding, or requiring the production of evidence, and of what is the primary or best evidence of any disputed fact, and any and all question arising in regard to the relevancy of any subject of inquiry, and the right to call for, or introduce, any part of evidence. The Master will, of course, determine such issues, and for that purpose will hear such arguments as satisfies him in regard to these matters.

Ordered that this may be substituted for paragraph No. 12 in the Order of Reference heretofore made, which paragraph is hereby vacated.

Enter this.

(Signed) CLARK, *Judge.*

Substituted
Order of Reference.

(Endorsements:) No. 1260. In the U. S. Circuit Court
469 at Knoxville. Knoxville Water Co. *vs.* M. & A. of Knoxville, *et al.* Order Entd. Journal R. p. 520 Filed 21 day of Nov. 1902. J. T. Carter Deputy Clerk Order of Reference.

SATURDAY, *January* 28, 1905.

Court met pursuant to adjournment.
Present and presiding the Hon. C. D. Clark, Judge, etc.

470 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

This cause came on to be heard before Hon. C. D. Clark, Judge, on thid 28th day of January 1905, upon the entire record and all

proceedings heretofore had in this cause, and more especially upon the report of Henry O. Ewing, Special Master filed herein on the 19 day of Aug. 1904, and the exception of plaintiff and of defendant to said Master's report, and argument of Counsel having been heard, the Court is of the opinion and doth order, adjudge and decree:

1st.

That all exceptions filed by the Plaintiff to the Master's report aforesaid, except, its exception number ten referring to blind services, be, and they are hereby overruled. Said exception number ten is sustained.

2nd.

That all the exceptions filed by the Defendant to said Master's report be, and they are hereby overruled.

3rd.

That the allowance of plaintiff's exception number ten does not necessitate a restatement of the Master's report.

4th.

That the said report of Henry O. Ewing Special Master should be confirmed, and it is hereby accordingly approved and confirmed, the allowance of Plaintiff's exception number ten, not affecting the result reached by the Master.

471

5th.

That the defendant has been duly served with process in this cause, and that the plaintiff is entitled to the relief prayed for in its bill filed herein, and it is therefore ordered, adjudged and decreed, that the ordinance passed by the Mayor & Aldermen of the City of Knoxville, Defendant herein, on March 30th, 1901, which is described in the bill in this cause, and against the enforcement of which by defendant, the Plaintiff has *paryed* for an *unjunction* in this cause, the same being an ordinance to fix and regulate water rates to be charged by plaintiff, at Knoxville, Tennessee is unreasonable, invalid and void, because it does not furnish or afford plaintiff a fair and reasonable return or income upon the fair and reasonable value of the *porperty* and water works plant used by the plaintiff in the public service at Knoxville, Tennessee. Therefore the injunction heretofore granted in this cause, staying the enforcement of said ordinance, and the rates therein fixed, is hereby made perpetual, and defendant the Mayor & Aldermen of the City of Knoxville, is hereby perpetually and absolutely, inhibited and enjoined from enforcing or attempting to enforce, said water rates ordinance of March 30, 1901, which is attacked by the bill in this cause or the rates therein fixed.

The cost of the cause, including the compensation of Henry O. Ewing, Special Master, will be paid one half by plaintiff and one half by defendant. If the Special Master and the parties to the

cause, cannot agree upon the compensation to be allowed
472 the Master, the Court will fix such compensation in the manner and the amount it may deem proper. Execution is awarded for the costs of the cause.

Enter.

CLERK, *Judge.*

O. K.
J. W. CALDWELL.
SHIELDS, CATES & MOUNTCASTLE.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company *vs.* Mayor & Aldermen of the City of Knoxville. Decree. Ent'd Journal S, p. 36. Filed 28 day of Jan., 1905. J. T. Carter, Deputy Clerk.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

I have now carefully studied the petition to re-hear in this case, and the briefs supporting and opposing that application.

The able and eminent counsel for the City has evidently misunderstood the opinion in one respect, or the Court was not sufficiently happy in expression to avoid being misunderstood.

The petition to re-hear proceeds upon the ground that
473 this Court in dealing with the value of the water *plant* in question took what is called "culminated depreciation," as well as incomplete or progressive depreciation, and added this to the value of the water plant. The Court in the opinion undertook to make expressly clear the proposition that it did not do just this thing, and stated that it was not regarded as necessary to treat this depreciation as a sum that should be added to the water plant or deducted from it. The view which the Court entertained and undertook to express was that in-as-much as the depreciation was a necessary incident to property like this, and had actually occurred and had never been re-paid, directly or indirectly, and probably never would be, that it was a circumstance and condition affecting property like this which the Court might and should consider in determining what would be an equitably fair and reasonable income on the present actual value of the plant. For example, the Court thought that this was a condition or incident of property invested in this form which rendered it more hazardous and less desirable than would be the case in regard to capital put out in the form of safe, conservative loans, or invested in a prosperous business not subject to such depreciation, as many forms of investment are free from the disadvantage of such depreciation.

For this reason the Court thought, and still thinks, that it was a circumstance and condition which might be taken into account in favor of the Company, in determining what would be a reasonable income on the property, but the Court did not understand itself as adding to the otherwise established value of the plant at all, and if the opinion pronounced it susceptible of that construction it fails adequately to express the precise view of the Court.

474 The other matters suggested in the petition to re-hear were, so far as I am now able to see, fully gone over in the discussion of the case at bar, and were most ably and exhaustively treated in that discussion, and these issues so discussed were decided by the Court upon full and anxious consideration, and as I do not now discover anything in the petition to re-hear that is new, or that was not well and clearly presented on behalf of the City at the Original hearing, it is not deemed necessary to go over the same grounds again in disposing of this application to re-hear, and without further discussion or comment the petition to rehear is denied and dismissed, with costs incident thereto.

Ordered accordingly.

(Signed) CLARK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Mayor & Aldermen of the City of Knoxville. Opinion denying and dismissing petition to re-hear. Filed March, 1, 1905. J. T. Carter, Deputy Clerk.

SATURDAY, *March* 4, 1905.

Court met pursuant to adjournment.

Present and presiding the Hon. C. D. Clark, Judge, etc.

KNOXVILLE WATER CO.
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

No. 1260.

This cause is continued and held over to the next (March term 1905) for final disposition, and for such decrees, orders, motions, etc., as may be necessary for that purpose.

Entered March 4, 1905.

MONDAY, *March* 6, 1905.

Be it remembered, that at a Circuit Court of the United States begun and held for the Northern Division of the Eastern District of Tennessee, at the Federal Court room, in the City of Knoxville, within said District, and the Sixth Circuit, on the first Monday, it being the 6th day of March, A. D. 1905; present and presiding the Hon. C. D. Clark, Judge of the District Court of the United States for the Eastern and Middle Districts of Tennessee, the following proceedings were had, to-wit:

THURSDAY, *March* 9, 1905.

Court met pursuant to adjournment.
Present and presiding the Hon. C. D. Clark, Judge, etc.

No. 1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

This cause coming on to be heard on this 8th, day of March, 1905, before the Honorable C. D. Clark, Judge, etc, upon the petition filed by defendants for rehearing the cause, the answer of the
475 plaintiff thereto and the briefs submitted. The Court is of the opinion that said petition should be overruled, as no reason appears why the cause should again be heard and it is so ordered, adjudged and decreed, and the petition to rehear is overruled and dismissed.

The defendant, the Mayor & Aldermen of the City of Knoxville, will pay all cost incident to the application for rehearing, for which execution is awarded.

To which decree and decrees heretofore entered the defendant excepts.

Enter this,

CLARK.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company, *vs.* M. & A. of Knoxville. Order. overruling petition to rehear. Ent'd. Journal S, p. 49. Filed 9-day of March, 1905. J. T. Carter Deputy Clerk.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
THE CITY OF KNOXVILLE.

In this cause the defendant, by its counsel, moved the
476 Court to add to and enter of record proviso, modifying and qualifying the decrees heretofore entered, sustaining the bill in this cause and dismissing its petition to rehear, to the effect that leave is hereby reserved and allowed defendant at any time it may be so advised, to move the Court in this cause for re-investigation of the question of the reasonableness of the rates prescribed by ordinance of March 30th, 1901, which motion was disallowed.

To this action of the Court the defendant excepts.

Thereupon the defendant, by leave of the Court, filed its petition

to re-open and to re-refer this case, and to have the matter of the reasonableness of rates, prescribed by the ordinance of March 30th, 1901, passed upon, in view of and with relation to the income and operating expenses that were actually realized and incurred, as shown in the proof in this case, after the passage of said ordinance, both before and after the filing of the bill in this case.

And upon consideration of said petition and the answer of the plaintiff Water Company thereto, and the briefs and argument of counsel for both parties, the Court is pleased to dismiss said petition.

To this action of the Court the defendant excepts.

Defendant is allowed to file assignment of errors within 30 days, if it shall choose to do so, which upon being filed shal- become and is made part of the record in this cause.

Enter this.

CLARK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Co. *vs.* M. & — of Knoxville. Order overruling motion to modify decrees entered. Order dismissing
477 petition to reopen and re-refer cause. Ent'd. Journal S. p. 50. Filed 9- day of March, 1905. J. T. Carter, Deputy Clerk.

SATURDAY, *April* 15, 1905.

Court met pursuant to adjournment.

Present and presiding the Hon. C. D. Clark, Judge, etc.

In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF KNOXVILLE.

In this case I have concluded to fix the compensation of the Special Master at the sum of $3,000.00. I am very sure that this is below, rather than above, what it ought to be, but in such matters I have uniformly tried to keep the compensation within very reasonable limits.

Ordered accordingly.

CLARK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Company, against Mayor & Aldermen of Knoxville. Order fixing Compensation of Special Master. Filed, April 15, 1905. J. T. Carter, Deputy Clerk.

No. 1260.

KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMEN OF KNOXVILLE.

478 Came on for hearing the motion of Henry O. Ewing, Special Master, for an allowance for his services as such Special Master in this cause, and the same having been argued by Counsel and considered by the Court, and the Court being of the Opinion that the sum of $3,000.00, would be reasonable compensation to said Special Master for his services in this cause, is pleased to and doth fix said compensation at the sum of $3,000.00.

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville. Knoxville Water Co. against Mayor & Aldermen of Knoxville. Order fixing compensation of Special Master. Ent'd. Journal S. p. 57. Filed 15- day of April, 1905. J. T. Carter, Deputy Clerk.

479 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

THE KNOXVILLE WATER CO.
v.
THE CITY OF KNOXVILLE.

479½ In disposing of this case finally I do not regard it as nese*aas*ry if it were practicable, to discuss either the issues of fact or of law in extended or special detail.

The conclusions at which I arrive from a study of this case can be very well understood by those directly interested in the result by expressing the Court's ruling in rather general statements. Indeed to discuss this case in detail in relation to all the points made would extend this memorandum opinion beyond all reasonable length. Consequently only two, and at most three, of the particular issues will receive separate or special discussion.

I think it is well to state in the form of general propositions certain general views under which the case is disposed of by the Court.

1.

The controlling issues in the case are what is the reasonable and fair value of the complainant's property devoted by it to public use as a public service corporation at the time of the enactment of the ordinance in question in 1901, and did the rates, as established by that ordinance, leave to the company a just and fair income on this reasonable value of its property, and this reasonable and fair income—to be determined by all the facts and circumstances of this

particular case—does not mean any particular per cent. or rate of interest, and cannot be determined by any fixed standards of interest rates, or dividend rates, except as these may furnish just analogy more or less applicable.

The specific question is what would be reasonable income under all the facts and circumstances of the case at bar, and the reasonable value of the property is not determined by the amount of outstanding bonds, the amount of stock, the replacement value, nor by the earning capacity of the water plant and property, but is to
480 be determined by a consideration of all of these elements in the evidence, when their bearing on the question of value is fairly considered.

2.

In the consideration of a case like the one at bar, or any similar case, the Court is not immediately concerned with a mere system of book-keeping, nor by striking a balance debit and credit sheets in book-of-accounts methods. It is not a question between creditor and debtor, nor between a trustee charged with the duty of managing and handling a trust fund and the beneficiary of such fund, and the accounting between such trustee and beneficiary in relation to such fund.

Again, it is not the case of a bill brought against a corporate management by shareholders, or creditors charging fraudulent or reckless mis-management and mis-appropriation of the assets of the corporation.

The plaintiff corporation owns the water plant and property as individual property, with a right to manage its business according to its own method and its own views, so long as it is violating no law and is discharging its obligations to the City, whether such obligations are imposed by its charter, or by statutes, or by contract. The plaintiff company is not working under a proposition to sell and the City to buy its property, and the Court is not taking an account with a view to ascertain the specific and certain value of the property on any such basis as that. The plaintiff is devoting its water plant to a public use, and that, under the adjudged cases, entitles the City to such fair and reasonable rates as will furnish the company a just and fair income on its property, and no more, and this is the extent of the right of the City to call this com-
481 pany to account and to call in question the value of its property, and these broader views of this case are necessary to be constantly borne in mind in order to avoid treating the case substantially as one on a bill by the beneficiary to hold the trustee to a strict account in regard to the management of the trust property, and any expenditures made in such management.

This view, and this statement in relation to the case, will clear away the supposed difficulty in regard to many very small items of disbursement by the Company from time to time; some of them in the promotion of public objects and which are now called in question as not proper expenditures, as if the bill were one by a benefic-

iary calling a trustee to strict account in regard to the management of the trust estate.

And for substantially the reasons thus stated the case is not one, as I have said, of examining books of account, or of a book of accounts system. The case must be considered and must be decided along broader lines than these, and under such views as may be broadly considered fair and just to both parties, without necessarily applying any or many of the technical rules which would apply to an accounting between parties sustaining the relation towards each other of creditor and debtor, trustee and beneficiary, etc., as above suggested.

3.

Another proposition which I regard as manifestly sound is that the validity of the ordinance here called in question must be determined upon the situation as it was at the time of the enactment of the ordinance into a law. It was at that time, and in view of the fact then existing, valid or invalid, and its validity or invalidity cannot be made to depend upon the charges in the situation
482 which might, or probably would have resulted during years subsequent to the passage of the ordinance.

It is contended, and with much plausibility and force, on behalf of the defendant that the plaintiff company has brought its injunction bill to have the ordinance declared invalid as amounting to confiscation, without waiting to see what the result might be by submission to provisions of the ordinance and accepting the rates as fixed thereby.

It is argued, for example, that a cheaper rate may have so increased consumption, and that growth in population may have so increased the demand that a fair and reasonable return would have been received under the ordinance in the near future after its passage, but it obviously requires no extended discussion to see that when the Court is called upon to adjudge the validity or invalidity of the ordinance no such question as that can arise, or — permitted to affect the result of the case. The Court is without power to retain the case in court and require submission to the ordinance with a view to the speculative question of whether or not the conditions may have so changed as to render the ordinance valid, which would be invalid on the state of case established by the evidence as existing at the very date of the enactment. It is to no purpose whatever, in dealing with the ordinance and its validity under the Constitution, to urge a merely speculative contention as to whether the conditions would or might be different in the future from what they had been in — part, and were at the date of the passage of the ordinance.

Furthermore, if the Company's contention is that the ordinance is invalid as confiscatory it is conceivable that in a given case an ordinance might be so speedily and decid-ly destructive as to bring
483 the company to a condition of utter insolvency and the complete destruction of its property while going through the experimental effort of submission to the ordinance with a view to get-

the result and to see whether or not the Company could remain solvent and a going concern under the terms of the ordinance.

Again, if the Company could have submitted to the rates fixed by the ordinance for one year, should they have done so for two years, or five years, or ten years? It is obvious on suggestion, without discussion, that if the ordinance was invalid as not permitting a reasonable income at the time it went into effect, its invalidity could not be denied upon the ground that in a future year, or in years, the conditions might so change that a similar ordinance would or might be valid, in view of the changed situation.

The plaintiff Company would clearly be under no duty to submit for any length of time to a law which amounted to confiscation, as not permitting a fair return on the reasonable value of its property.

Consequently the cases hold, as I understand them, that the validity of the ordinance must depend on the facts found to have existed at the time the rate regulating ordinance was enacted, and this view will dispose of certain parts of the argument, and certain objections to the evidence based upon the ground that the Master refused to receive evidence of what would or might have been the condition of things during the year or years immediately succeeding the passage of this ordinance.

4.

A third proposition which may be announced in the form of general statement, is that in this proceeding the Court cannot consider or determine whether or not the water Company is operating a plant which contains defects which ought to be remedied, such as water mains of insufficient weight and water carrying capacity,
484 and defects urged against what is called the "Intake Tower," on account of the unsanitary conditions growing out of the particular place where water Intake is situated.

The Court is not permitted, in a proceeding like this indirectly and collaterally, to investigate and determine questions of that kind, and *cr*etainly the Court is without power to punish the plaintiff, indirectly and collaterally, by deducting from the otherwise established value of its property an amount supposed to represent the defects referred to, and lower what would otherwise be a fair income to the Company by an amount supposed to represent the per cent. on deductions thus made for defects.

The established fact is that not withstanding such alleged defects the parts of the plant complained of are in use for the purpose for which they were constructed, and if they are defective and not what they ought to be under any contract with the City, or under any statute-imposed duty, the City has a remedy in a direct proceeding instituted for the purpose of correcting the defects and requiring the Water Company to discharge its duty toward the City, and it is not an issue to be dealt with in a proceeding like this; and this view disposes of the contention on behalf of the City in regard to these objections, and disposes of it against that contention.

5.

I should say also, by way of introductory statement, that in the investigation of this case I found that the exceptions were so general in reference to the testimony, that it was necessary to go beyond the exceptions and to enter upon the evidence in the case at
485 large, as the report and the exceptions did not seem to narrow the case, as it was hoped might be done, and the judgment which is pronounced in the case is based upon a study of the case broadly, as disclosed by the evidence, and the effort has not been to narrow the consideration of the case, or the study of the evidence within such limits as might be pointed to by exceptions to the Master's report, and certain parts of this record have been read a second and some of it a third time.

6.

I have not regarded it as essential in disposing of the case to separate the portions of the plant and income which relate to business done outside of the corporation limits from the plant and income within the City, as, in my opinion, the case does not depend on such narrow discrimination and separation as this aspect of the case would call for.

In disposing of the case I have studied carefully certain cases, and in undertaking to apply to this case the general and fair result of these well considered cases, as I understand them, I have borne in mind all the time that each case depends on its own facts, circumstances and conditions, and that these facts, circumstances and conditions may be, and generally are, materially different in any one case from what will be found in another. These distinguishing facts of any particular case have brought out the statement from one of our most eminent jurists, that in the consideration of such cases "no iron clad rule applies."

Necessarily and generally what will be equitably fair and just will in each case depend on a number of elements common to the cases, and besides these also a considerable number of facts, circumstances and conditions peculiar to the particular case being consid-
486 ered and determined, and hence the common observation of eminent lawyers, and of the judges of the Court, that no two cases are likely to be identical, but almost certainly different in essential points.

The cases to which I refer are as follows:—

Smythe *v.* Ames, 169 U. S. 466.
San Diego Land Co. *v.* National City, 174, U. S. 739.
Cotting *v.* Kansas City Stock Yards Co., 183 U. S. 79.
San Diego Land & Town Co. *v.* Jasper, 189, U. S. 442.
Spring Valley Water Works *v.* City, etc, of San Francisco, 124 F. R. 574.
Stanislaus County *v.* San Joaquin C. & I. Co., 182 U. S. 201.
National Water Works Co. *v.* Kansas City, 62 F. R. 853.

I now pass to the consideration of certain special phrases of the case. It may be here stated that there seems to be no serious disagreement as to the actual facts and history and cost of this water plant.

In exception No. 1 to the Master's report by the defendant it is said in reference to the Master's finding that the ordinance rates would not yield a fair income to complainant:—

"The Special Master's error in this regard arises not so much from erroneous findings of fact, but rather from mistaken conclusions on questions of law, or on questions of mixed law and fact which are reviewed in subsequent exceptions.

One of the much disputed questions relates to what is called service connections, by which a charge was made by the company to the water consumer for putting in these service connections with the main, or supply pipe, the cost of which is fixed at the sum of $8.00, and the contention on behalf of the defendant is that as the persons making these connections paid the cost thereof, that the aggregate sum of this amount cannot be treated as an expenditure by
487 the company, or as constituting any part of the value of its property. As the evidence shows that a majority of these pipe service connections have been renewed by the Company the question loses, by that circumstance, much of its force or materiality, but the charges were made under authority of law and the exceptions and the argument supporting it do not now proceed upon the ground that *the argument supporting it do not proceed upon the ground that* the service pipe connections belong to the company. On the contrary it must be taken for granted that this is conceded, but the contention is that as it was not an actual outlay by the company it cannot be regarded as part of its water plant system, and entering into the question of the fair value of the property.

In regard to this I do not consider it material whether the company acquired any of its property or franchises by gift, contribution or purchase. So long as it constitutes part of its plant. and the ownership of the property, which is the subject of the particular question, is not disputed, it must be regarded as a part of the plant and an element in determining what is its reasonable value.

This statement, together with the further statement that we are not here taking a book system account as between creditor and debtor, or vendor and purchaser, is all that need be said in relation to this objection to the Master's report.

These service pipe connections are distinguished from what is called "blind service" in the record and in the argument and briefs. This blind service, consisting in certain work and the laying of certain pipe, was done under an ordinance of the City which required this to be done under compulsion by the City. The contention on behalf of the City is although it, by ordinance required this to be done, and compelled it to be done, that it cannot be regarded as an expenditure which must now be considered on the question of
488 reasonable value, because not in use, but cannot accept this view.

It is not open to the City by compulsory ordinance to require an expenditure of this kind, and then as between itself and the company, and in relation to the issues here involved, say that it was not an expenditure by the company in such a way as to make it a part of the present value of the plant, on which the company has a right

to a reasonable return, as on any other just element in the value of the plant.

It would be grossly and manifestly inequitable to permit the City to sustain a contention of this kind, and I am quite clear that the 10th exception by the plaintiff to the Master's report, based upon the exclusion of the blind services, is well taken. But this does not necessitate re-casting or re-stating the report in any particular, because, as stated, we are not taking any rigid account between these parties, under which we are following iron-clad, or hard and fast rules.

It is further insisted that the circumstance that the water company allows a discount on its bills, when due and payable within a limited number of days, if paid without efforts to collect, is a concession that its rates may be made lower. This is purely a business method adopted by all similar corporations, and the company at no time expects, or could reasonably expect that solvent and debt-paying consumers would refuse to take advantage of this proposition and pay their bills, and it is not to be doubted that it is a method solely and purely to put pressure on those who are careless in the matter of paying their accounts promptly and to save the company from the trouble and expense of collecting its established rate, which it is not to be doubted is intended by the company to exclude this dis-
489 count, as the number of people or the per cent. of consumers who would fail to pay would be so small, and so likely insolvent, that any sum which could be realized by the imposition of this 5% penalty to secure payment would amount to no material element in the return to the Company or its gross income from rates, and this point may be dismissed without further elaboration.

A subject which has received most serious and extended attention and discussion on both sides, is that of depreciation both culminated, or completed depreciation, and incomplete depreciation.

If a particular part of the water plant, as originally constructed, in consequence of the growth of the City, or necessary changes in the operation of the plant, or in consequence of deterioration from natural causes of wear and tear, has become unsuitable and has been taken out and completely abandoned to the category of scrap material, or scrap iron, this is treated as culminated or completed depreciation, and its cost or value as completely gone out of the plant.

Non-completed depreciation is where, in consequence of wear and tear from natural causes, parts of the plant are undergoing injury and are on the way to complete destruction, but are still in use.

The depreciation which the evidence establishes in this case, and about which parties are substantially agreed were; culminated, depreciation $95,987.04, and incomplete depreciation $77,726.51.

The plaintiff figures upon the amount of the culminated depreciation which has not been re-paid, by rates or otherwise, what is called the "accretion of interest," amounting to $11,028.64. The
490 first named sum is treated as arrears of depreciation, and the second as non-completed depreciation in such parts of the plant as are still in use, although they are sound enough for use, but

not as good as new, on account of the time during which they have been in use and have been subject to damage from natural causes.

The uncontroverted evidence does establish that these arrears of depreciation have never been re-paid, or the company reimbursed for them in any method, directly or indirectly, in the form of a depreciation fund rates, or dividends, except to the extent of a depreciation fund shown on the Treasurer's books of $19,344.94.

This last sum, counsel for the plaintiff undertakes to explain a way as not, in final substance and effect, going toward dep-eciation re-payment. However this may be, I do not find it necessary to determine, for the reason already several times stated herein, that the Court is not taking any book of accounts and dealing minutely and technically with a creditor and debtor system.

The Master in his report states expressly that the subject of incomplete depreciation was apparently abandoned from which I infer that he means to say that it was abandoned as an element in the matter by both sides, as the report does not say by which side.

However, in the argument of the case at bar, and in the briefs, there is, as I have stated, a very serious and a very extended contention in regard to depreciation, both culminated and incomplete, and the manner in which it is insisted that these two elements, or items shall be dealt with, and the effect of these facts on the result of the case.

In regard thereto the views maintained by counsel for the plaintiff and the defendant are so different and divergent as to be quite striking indeed.

491 The plaintiff's contention is that these arrears of depreciation, never having been paid by the rate income in any method whatever, directly or indirectly, the plaintiff is entitled to a rate which will establish a depreciation fund calculated to reimburse the water company for this completed loss, and that it is entitled to a 2% depreciation income calculated to repair from year to year looses in the future, and that as this rate has not been allowed and not been paid in the past, but is in arrears, that it is entitled to such a rate income as will in some form make good both the completed depreciation and non-completed heretofore sustained, for otherwise, as the contention is, both the culminated and incomplete depreciation which have accrued heretofore will be absolute and complete looses to the company, as the rate heretofore has not paid any consideration in any form for the loss which would otherwise be finally sustained in both forms.

I cannot at all accept the views of one of the able experts; that the parts of this plant which have been in use for years, some of it for as many as 20 years, are as good as new. This is just one of those things that the Court must know for itself cannot be so, and that is all that is necessary to say about it.

The incomplete depreciation is there, and necessarily there as the result of natural causes.

Now, on the other hand the eminent counsel for the City deals with this subject of depreciation in both forms, by saying that the culminated depreciation must go entirely out of consideration and

be treated as a loss and finally dismissed, and that there should now be a deduction from the otherwise reasonable value of the
492 plant, viewed in the light of investment on account of non-completed depreciation, to the extent of $77,726.51: and the insistence further is that after this incomplete depreciation is deducted from the value of the plant, that the company is not entitled to any rate for the purpose of making that good, on account of depreciation heretofore accruing, down to the date of the passage of the ordinance.

So far as the future is concerned the Master, on the evidence, concluded that the water company was entitled to a rate income which would allow 2% on the reasonable value of the plant to cover this constantly progressive depreciation in future years, but this did not touch the question of any compensation in any way, directly or indirectly, for non-completed depreciation down to the date of the enactment of the ordinance. So that according to the contention of the City by its able counsel, this company is under the necessity, as towards the city, of losing absolutely and finally the culminated depreciation, and in like manner the incomplete depreciation down to the time of the ordinance, by its deduction from the otherwise reasonable value of the plant, and that it is not entitled to a rate of income which will afford any compensation in the way of a sinking fund, or a depreciation fund, or interest on the lost capital which would represent this depreciation; in other words that the company is not entitled to be reimbursed for this loss in the form of re-payment of the loss, or of an income on the sum which represents this loss.

If this position is sound it seems to me too manifest to require argument that such a doctrine leads to results that are already unjust and inequitable, and if any principle can be found on which
493 this water company, by reason of its relation to the City, is under obligation to sustain this large loss, with no form of repayment of the capital, and without its *at all* adding at all to the value of the plant, and without any return on the same in the form of a dividend or rate of charge, I am not aware of such principle, and after a most careful study of this point I *am* unable to *preceive* grounds on which such a proposition can rest and command approval.

It is to be remembered that this loss in the two forms, put in the aggregate, runs well up towards $200,000.00, and that if what is called "accretion of interest" is added to the culminated loss it would go well nigh to that figure.

Now, does this water company sustain any such relation towards the City, and is its ownership of this plant and its operation subject to any just or legal demand on the part of the City that it shall submit to this large loss? It must be repeated just here that the loss is conceded and the case argued from that standpoint by both sides, though, as I have said, the application of this fact and the effect which it is supposed it has on the case has caused counsel to urge views in relation to it which point indirectly opposite directions.

The testimony in this record is that property like a water plant, in its evolution or development, is necessarily subject to both kinds of

losses, owing to natural causes and wear and tear, and owing to the fact that cities grow in population, manufacturing enterprises and wealth to such an extent that parts and equipments which at
494 first enter into such a plant must, in furtherance of the public interests and public necessities, be discarded as no longer suitable for use and replaced by new constructions and new construction work, which sati-fy the demands of the City and its inhabitants, in the progress of the City's growth, and it seems impossible to anticipate, with any degree of satisfaction, what these demands will be, owing to the fact that the growth of the city in its residence population and in its industrial and commercial interests cannot be foretold, or seen. All of these are finally affected by other conditions, such as railway construction, the establishment of rapid transit lines and the like, the development of which, of course, could not be foreseen.

Now, I must, at the expense of repetition, say again that I am not taking or stating any debit and credit account.

If this is capital loss necessarily, and if the age and growth of the company, when such losses must be sustained has been passed, does it not add a value to the plant and property that it has gone through this hazardous and experimental evolution? To the extent that these losses have been sustained they will not be sustained again, but only new losses in the form of the future growth of the City and population, which it was the purpose of this plant to serve and supply. It must be that the evolution through so disadvantageous a stage must add something to the value of what is left. If this is not so we have a striking lesson of the disadvantage of an investment of capital in this form, as contrasted with its investment in safer forms, with entire freedom from care and anxiety, and from depreciation of capital and from constant attention and energy to prevent such depreciation and secure a reasonable return.

495 If we contrast such an investment as this with the usual commercial forms of loan on good security, or again, investments in United States bonds, at a very low rate of interest, the desirableness of the one form of investment, its safety and certainty, as against the other, it is too impressive and important in its bearing on the question here to remain unacknowledged. Well secured loans of capital begin to re-pay the stipulated income from the very day of the loan. The capital is not subject to depreciation or loss, except as would be involved in a condition of insolvency, and if secured by real estate or other property, or collateral, insolvency would not affect the loan. The rate of income is uniform.

As I have said from the beginning, in a plant like this it takes time, effort, close attention, constant watchfulness, etc. to secure any return, and the returns in the earlier years are very small, if any, and the difficulty of guarding against depreciation and loose is very great.

But I cannot now dwell upon this subject any further, or go into more minuteness of detail.

That capital invested in an enterprise of this kind, owing to the less desirable and less satisfactory conditions under which it is in-

vested and maintained, is entitled to a larger income than would be regarded as fair and just on money put out on loans, well secured, is too evidently plain not to be acknowledged. It does not seem to me necessary for this *for this* Court to discuss or determine whether depreciation in any form should be treated as capital and reimbursed or a rate permitted which would afford some return thereon, or whether it should be added to the otherwise established reasonable value of the plant, and a rate allowed in that way as on a reasonable value of the property; or whether a rate should
496 be permitted that would provide a fund for the final reimbursement for this loss. It is sufficient to say that it is a fact, a circumstance, a condition, or an element in this case which is entitled to consideration, and is, in my opinion entitled to such considerations in favor of the Water Company. It is one of those considerations and elements, all of which the Courts say must be taken into account, in order to do what may be approximate justice and equity as between the parties, in view of the whole situation found in regard to the plant which is the subject of a rate-regulating ordinance and it is not necessary to go beyond this statement in dealing with this case.

I am satisfied that the Master in dealing with the reasonable value of this plant, and the several items which he handles on the way to that result, has worked out results which are, for all substantial purposes, correct and substantially well founded and well established by this evidence.

The Master shows in his report that he has been alert in regard to the evidence of the expert witnesses, in view of their skill and ingenuity, and in view of the fact that, although honest and fair, so far as their intentions are concerned, they become to an extent unavoidably partisan witnesses, and are liable to give to their testimony a partisan color. It is quite plain that the Master in regard to one, if not more, of the witnesses has practically ignored the testimony, because the evidence on its face disclosed some ground for the suggestion of partisanship.

In regard to the other witnesses, the eminent counsel objecting to the report has not, as I understand the line of argument, seriously contended that the witnesses did not undertake fairly to handle the facts, figures and conditions relating to the plant and its construction and operation. The difference is what eminent counsel
497 handles the same figures differently and works out somewhat different results. The testimony of two intelligent witnesses on behalf of the defendant has been rendered far less valuable or servic-able, owing to the circumstances that such witnesses, in giving estimates and figures as to replacement cost as a circumstance bearing on the question of value, did not undertake to speak of a replacement of the plant and the different parts of its equipment as actually found in use at the City of Knoxville, but have proposed to substitute what they consider equally as good, or better parts of plants, costing less.

It needs no argument, however, to see that this is no proper basis on which to determine the value of this plant. The water company

was not a trustee for the city, it was not acting at its peril in the attempt to select what it thought was the best plant and the best parts to constitute the plant as a whole; it was at all times, in view of its own permanent interests, and no economical grounds, under the greatest possible motive to exercise all the judgment and skill that could be exercised, with a view to these ends, but it was not under obligations to adopt any particular pattern or kind of plant, in whole or in part, as towards the City, and there is no charge that there was any recklessness or bad faith, and indeed the existence of any ground for such a charge is almost inconceivable. I have myself, in the examination of the extra-ordinarily large amount of evidence found in this record, been as careful as I could to avoid being misled by the skill and experience of men calculated to handle figures to the best possible advantage. Reasonable and substantial approximations are all that can be arrived at in a case like this.

It is agreed by counsel that the ordinance in question
498 and the rates established thereby, on the reasonable value of the plant as found by the Special Master, would give to the Company a return thereon of only 3 & 35/100 per cent. annually.

The Water Company is not necessarily entitled to the rate of interest established by the statute of the State, nor to any other fixed rate of income, but only to what, under all the circumstances of the situation, is a fair and reasonable return on its property devoted to the public use.

The courts are always justly reluctant to strike down an ordinance of a municipal legislature, or a similar enactment by the legislature of the State, or of the United States but it becomes necessary now and then to do so in order to afford that constitutional propection which is guaranteed to every citizen under our government, and which guarantee furnishes a powerful encouragement to investment, to developing the natural wealth of the country, and to the free enjoyment of all other rights of persons and of property.

Under all the facts and circumstances of this case, and after much deliberation, I conclude that the return which this ordinance permits on capital put into this form of investment, and subject to the hazards which pertain to such investments, managed at the best, does not permit a fair and reasonable income on the value of the property.

It seems to me also that I must take into consideration that as matter of law the City of Knoxville is at liberty, if it chooses to do so, to establish and operate a water plant of its own, and in that way come in direct competition with the business of this plaintiff, and in that way it would be rendered much more difficult for the plaintiff
499 to maintain and operate its plant and obtain any reasonable return on its property devoted to public use. Indeed such a condition might become destructive. The adjudged cases show that just such a thing has occurred in the history of our Country. And it is a fact, though perhaps not technically before the Court, but still disclosed by the records, that the water company recently undertook by the bill filed in this Court to enjoin the City from taking just this step, as being in violation of its vested contract

rights, and upon full consideration of the question this Court decided that the City possessed the right and power to build and operate such a plant, and the existence of such a right in the City, liable at any time to be availed of in practical use, is a circumstance showing that investments in property like this water plant is much less secure against permanent loss and against legal return on the investment than other forms of capital, like well-secured, interest-bearing loans, or commercial or industrial establishments not maintained under similarly uncertain conditions.

It must not be understood that I mean to say or imply that the water Company is entitled to any particular rate of income, or that the Mayor & Aldermen of the City of Knoxville might not have passed a valid regulating ordinance, which would to some extent have reduced the income of the plaintiff. The case does not require that I should decide questions like those. The judicial power is at an end when it determines that the rate of income, as fixed by the ordinance, does not furnish the water company that just an- fair return on its property which it has the right to demand and the Court is without power to say what rate might be established, or in advance what rate, if established, would be valid, as that would be the exercise of legislative and not judicial power. And so the Court is not called upon to say what rate of income would be a fair
500 and just return upon the property. It is sufficient that the Court concludes that the rate now fixed cannot be sustained and that the ordinance is invalid; which is accordingly so declared.

Now, the plaintiff water company, it is quite evident, denied the right and power of the City to regulate its charges, and in upholding that right is refused, on request, to furnish the Mayor & Aldermen of the City of Knoxville any evidence or data on which that legislative body might have proceeded more intelligently to determine what rate of charge would be fair and reasonable, as permitting a just return on the real value of the property. Such an inquiry involved the two questions here involved, namely, of fair and reasonable value and fair and just return on that value.

It seems that the Mayor & Aldermen were, to a large extent, therefore, under the necessity of making a strike in the dark, if they did anything.

In view of this, and the other special facts and conditions of the case, I have concluded that the costs of the case shall be equally divided and paid, including reasonable compensation to the Special Master for his work.

If that compensation is not agreed upon, and counsel for the plaintiff and defendant will furnish me in writing their views, as I am perfectly familiar with all the work done by the Master, I will undertake to fix the compensation without a reference, and counsel are requested to take such course with this point in the case as they may choose to do, and advise the Court, and on failure to do so, on the Master's motion, the Court will take proper steps to fix the compensation.

501 It is hardly necessary to add that plaintiff's 10th exception is sustained, and that all other exceptions to the Master's report, on both sides, are over-ruled and the report confirmed.

It is so ordered.

It seems permissible to renew the suggestion made at the origin of this litigation, to the effect that a wise settlement of differences might promote the best interests of both parties to the controversy.

Well qualified men, approaching the subject justly and fairly, as a purely business matter, free from feeling or passion, and willing to make reasonable concessions, might readily reach substantially fair results.

In the nature of the questions and subject here to deal with, only approximate, and never absolute, results can be obtained. A substantially fair agreement as to rates, or terms of sale, might work more good to both parties than long litigation, delay and heavy expense.

CLARK, *Judge.*

(Endorsements:) No. 1260. In the U. S. Circuit Court at Knoxville, Knoxville Water Company against Mayor & Aldermen of the City of Knoxville. Opinion. Filed Jan. 24, 1905. J. T. Carter, Deputy Clerk.

361.

502 *Appearance and Judgment Docket.*

No.	Parties.	Action, etc.	Attorney, etc.
1260.	Kxoxville Water Co. vs. Mayor & Aldermen of the City of Knoxville.	Orig. & Inj. Bill. The United States Fidelity & Guaranty Co. surety for costs.	Chas. T. Cates, Jr.

Date.	Proceedings.
1901.	
Dec. 7.	Cost bond filed. Bill filed at 2.10 P. M.
7.	8 Exhibits filed
7.	Motion for injunction filed
11.	Restraining order filed at 9.45 A. M.
11.	Copy of restraining order issued
11.	*Cha. Spa.* issued returnable to January Rules
13.	" " returned executed Dec. 11, 1901
18.	Rest. Order " " " 11, "
18.	Comes Pickle & Turner Solicitors and enter the appearance of def't in this cause
23.	Demurrer filed

1902.

Jan. 4. Answer of def't filed
13. Copy of charter Knoxville Water Co. office Sec'ty of State filed
13. Affidavit of C. T. Cates, Jr. filed
14. Copy of amendment to Charter of Knoxville Water Co. filed
14. Additional brief for Def't filed
15. Supplemental " " Compl't "
15. Brief for Pl't'ff filed
15. Certified copy of Judgment in Supreme Ct. of Tenn. in M. & A. of K. *vs.* K. Water Co. filed
15. " " " Opinion in Supreme Ct. of Tenn. in M. & A. of K. *vs.* K. Water Co. filed
16. Reply brief of compl't filed
16. Replication filed
27. Opinion filed

Feb. 1. Decree entered
1. Bond with U. S. Fidelity & Guaranty Co. (dated Jan'y 29, 1902) as surety for $10,000 filed.
1. Injunction issued
18. " returned executed and filed

May 15. Motion for hearing of above petition filed.
19. Acknowledgment of notice, petition & motion filed
31. Brief for compl't in support of Petition filed
31. " " Def't opposing petition together with 2 exhibits filed

June 6. Opinion filed

Oct. 2. Brief for defendant on proposed Order of Reference filed
2. " " compl't " " " " " "
6. Order of reference entered

503

10. Defendant's request for report by Special Master on Special matter filed

Nov. 19. Plaintiff's petition for revision of Order of Reference filed
21. Opinion modifying order of reference filed
21. Order modifying order of reference filed
21. Charter of Incorporation filed (in safe)

1903.

M'ch 28. Petition of Defendant filed

April 3. Answer of Plaintiff to Defendant's petition of M'ch 28, 1903 filed
8. Brief and Reply Brief for Defendant filed
11. Brief for Compl't filed
22. Additional Brief for Defendant filed
27. Reply brief filed

May 5. Opinion on petition of defendant filed
16. Sup. " " " " " "

June 24. Petition of Def't to Special Master filed
24. Answer of Complainant to above Petition filed
29. Opinion of Special Master filed

1904.

Jan'y 14. Transcript from Chancery Court in cause of Knoxville Water Co. *vs.* M. & A. of Knoxville filed
14. Copy of Decree, etc. in Supreme Court in cause of Knoxville Water Co. *vs.* M. & A. of Knoxville filed
Feb. 5. 6 Volumes of proof filed
8. 1 " " " "
M'ch 4. Exhibits to depositions filed
21. 2 Briefs for Def't filed
24. Brief " Compl't "
Apr. 13. Sup. " " " "
Aug. 19. Pl't'ffs exceptions to first draft of the Master's report filed
19. Def'ts exceptions to report of the Special Master filed
19. Special Master's report filed
Sept. 17. Complainant's exceptions to Special Master's report filed
20. Ord. allowing def'ts exceptions to draft of Master's report
23. Motion to strike from files the exceptions of def't
Dec. 1. Order allowing amendment to bill
3. Petition of Def't to correct order of reference
5. Affidavit of Henry O. Ewing filed
5. Amendment to amended bill filed
7. Compl'ts memorandum of record on depreciation filed
10. Order correcting order of reference
22. Pl't'ffs brief on bill of exceptions filed
22. Def'ts " " " " " "
29. Order overruling demurrer to amended bill entered
Dec. 31. Brief of Compl't in support of Bill of Exceptions filed
31. Brief of Def't in opposition to Bill of Exceptions filed
Jan. 6,'05. Affidavit of Chas. T. Cates, Jr.
24. Opinion filed
28. Decree entered
Feb. 1. Petition to rehear filed & exhibits to same
1. Affidavit of W. T. Kennerly as to copies filed
6. Answer of Compl't to Petition to rehear filed
M'ch 1. Opinion denying & dismissing petition to rehear filed
4. Order of continuance
8. Petition to reopen & re-refer cause filed
9. Decree overruling petition to rehear
9. Decree overruling motion to modify decree heretofore entered and dismissing petition to reopen & re-refer cause
13. Statement of Henry O. Ewing, Special Master, on motion of compensation filed
15. Exceptions & Assignment of Errors filed
20. Answer of Compl't to statement of Henry O. Ewing Special Master filed

504

21. Answer of Def't to statement of Henry O. Ewing, Special Master filed
28. Brief for Special Master filed
Apr. 15. Opinion fixing compensation of Special Master filed
15. Order fixing compensation of Special Master filed

505 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

No. 1260. In Equity.

THE KNOXVILLE WATER COMPANY, Plaintiff,
vs.
MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE, Defendants.

Petition for Appeal to the Supreme Court of the United States.

The above named defendant, Mayor & Aldermen of the City of Knoxville, conceiving itself aggrieved by the final decrees and orders made and entered on the 28th day of January and 9th day of March, 1905, in the above entitled cause, and by the other decrees and orders entered herein prior to said dates, does hereby pray and take an appeal from all of said orders and decrees to the Supreme Court of the United States held at Washington, D. C., for the reasons specified in the assignment of errors, which is filed herewith, marked Exhibit A hereto, and made part hereof, and it prays that this appeal may be allowed, and that a transcript of the record proceedings and papers from which said orders and decrees were made, and of said decrees and orders duly authenticated, may be sent to the Supreme Court of the United States for the consideration and action of that Court, and your petitioner will ever pray.

MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE, *Appellant,*
By G. W. PICKLE, *Att'y.*

J. W. CULTON, *City Att'y.*
AND
PICKLE & TURNER,
Attorneys for Appellant.

Dated 21, Day of January, 1907.

The foregoing claim and prayer for appeal is allowed.

HORACE H. LURTON,
Circuit Judge.

506 (Endorsed:) The Knoxville Water Company, Plaintiff, *vs.* Mayor & Aldermen of the City of Knoxville, Defendant. No. 1260. In Equity. Petition for Appeal to Supreme Court of the U. S. Filed Jan'y. 21, 1907. D. L. Snodgrass, Clerk. By W. L. Edington, Dep'ty. Clerk.

507 "EXHIBIT A" TO PETITION FOR APPEAL.

1260. In Equity.

KNOXVILLE WATER COMPANY
vs.
MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE.

Defendant's Exceptions to and Assignments of Error upon the Decrees, Rulings and so forth of the Court in this Cause.

In this cause, the defendant, by its attorneys comes and makes, and enters exceptions to, and assigns errors upon the decrees, orders, rulings, &c. of the Court in this cause, for the following reasons, to-wit:—

I.

The Court erred in sustaining the bill, and in adjudging thereon that the defendant's ordinance of March 30th, 1901, was unconstitutional and void for any reason, and that the same should be perpetually enjoined, and defendant taxed with any part of the costs of this cause. Said ordinance was not in conflict with any contract between the plaintiff Company and the defendant, nor was the schedule of rates therein prescribed unreasonable or confiscatory, or unconstitutional, as violating or in conflict with Section 10 Art. I, of the — United States and Section 1 of the 14th Amendment thereof, or for any other reason illegal, unconstitutional and void.

508 II.

The Court erred in overruling the defendant's petition to rehear. The several grounds therein set out, each and all afford good and sufficient reasons for the rehearing of this cause and dismissal of the plaintiff's bill. The said grounds for a rehearing are fully set out in the petition, which is hereby referred to, and incorporated herein, and made part hereof in as full and ample a manner as if specifically copied and set out herein.

III.

The Court erred in dismissing defendant's petition to reopen and re-refer this cause to a Special Master to ascertain whether or not upon the facts existing with reference to the value of the plant, income and operating expenses subsequent to the passage of the ordinance were such as to show that the rates prescribed by said ordinance of March 30th 1901 would have afforded a fair return to the plaintiff Company. These facts should have been looked to and reported upon under the original order of reference, but this was not done. This error is intensified by the fact that the bill was not filed until about nine months after the passage of this ordinance, and the further fact that the actual receipts, or earnings of this Company, and its actual operating expenses under its own rates, were known and susceptible of exact proof for three years after the passage of the

ordinance, and are actually in proof for one and a half years after its passage.

IV.

The Court erred in making any reference whatever of this cause to a Special Master upon the state of the record existing at the
509 time of the original hearing. At this date, no proof had been taken, the averments of the bill were met and denied by the answer. Upon this state of the record, the Court should have dismissed the bill.

V.

The Court erred in the matter and manner of the reference made. The cause should have been heard upon all matters legitimately raised by the pleadings and proof, and after settling the controverted questions of law, the reference should have been of disputed questions of fact only. Instead, the court permitted the plaintiff to submit an order of reference containing eleven propositions, not more than one or two of which submit questions pertinent to the issues and inquiry in this cause. Upon defendant's exception and insistence upon a more accurate order of reference, the court, by the twelfth clause of the order of reference in this case, permitted counsel on either side to submit any additional written propositions that they desired, to be filed within ten days and made a part of the record, subjecting each party to the penalty of costs for any unnecessary or irrelevant inquiries submitted and made. The defendant submitted and filed a number of propositions pursuant to this leave and action of the court, which it insists presents the material questions of inquiry in this case. Subsequently the court ordered that the Special Master should be the sole judge of what was material and what was immaterial in executing the references. This, in fact and effect was a general reference of the whole case upon both law and evidence to the Special Master, without any direction from the court upon matters of law to guide his action This was erroneous, and this error was intensified by the refusal of the Master to report upon any one of the propositions submitted by the defendant, or upon some of those submitted by the plaintiff.

510

VI.

The court erred in sustaining any of plaintiff's exceptions to the Master's Report, especially that with reference to the allowance of blind services as a part of the value of the plant, and that with reference to depreciation of the plant.

VII.

The court erred in over-ruling the defendant's exceptions to the Master's report, and these exceptions are referred to, and herein adopted, and made part hereof in as full and ample a manner as if the same were herein set out verbatim and defendant excepts to, and assigns error to each and all of these exceptions and the confirmation of the Special Master's report over the same.

VIII.

The Court erred in its rulings and decisions with reference to the valuation of the plaintiff Company's plant for purposes of this inquiry, especially in the following particulars, to-wit:—

(*a*) In adopting the Special Master's basis of the cost of re-construction of an entirely new plant as the value of the existing plant, which had been in existence and use for more than twenty years:—

(*b*) In estimating or confirming the estimate of the Special Master as a part of the value of the plant upon which a fair return should be made to this company, such parts or incidents thereof as were contributed or donated to the Company by the public or the city, to-wit: services put in at the cost of consumers, about $25,000.00 to $40,000.00, and "going concern" or good-will $60,000.00 arising from the generous patronage of the company by the public:

511 (*c*) In estimating, or confirming the Special Master's estimate as part of the value of this plant, unused portions of the plant, such as blind services, &c.

(*d*) In estimating, or confirming the Special Master's estimate as part of the value of this plant of such things as did not enter into the original construction of the plant, though they might be necessary in a re-construction of the same at the present date, such as the restoration of pavement or macadam on the streets over the pipes. This amounts to some $15,000.00.

(*e*) In adopting excessive estimates of values of such things as reservoir, pipe, machinery, &c. amounting to many thousand dollars. The allowance of the most of these matters, was a pure question of law, which the court has failed to discuss specifically in its opinion, but has settled, by its general ruling confirming the Master's report in favor of the plaintiff Company.

(*f*) In refusing to consider as affecting value, serious defects in the construction of the plaintiff Company's plant, such as the improper location of its intake-tower, insufficient size of its pipe &c.

The valuation adopted in this case is in consequence, very excessive; it exceeds the valuation indicated by its assessment for taxes, by the difference between its tax assessment of $275,000.00 and its valuation in this case of $608,000.00.

IX.

The Court erred in its action and rulings with reference to, and in the ascertainment of the income of this plant for purposes of this case, in the several respects that follow, to-wit:—

(*a*) In refusing to look to, or consider, or to have the

512 Master report upon the actual income of this plant under its own rates for any period subsequent to the passage of defendant's ordinance of March 30th, 1901. For one and a half years after the passage of this ordinance, the income of this plant was proved in this case by its officers and from its books. The Court refused to look to this income as affording any evidence touching the reasonableness of the reduction of rates made by the city ordinance. As the city ordinance makes a horizontal reduction of about twenty per cent. of the Company's rates, the court by reducing the actual

receipts of this company, after the passage of the ordinance by twenty per cent., could have ascertained with almost mathematical certainty, what would have been the plaintiff Company's income under the City's ordinance. Instead, the court erroneously had the Special Master to report upon the income of the preceding year only, and speculated from that standpoint as to what would have been the income for the next year, and what would probably have been realized under the ordinance. The income of the year succeeding the passage of the ordinance exceeded that of the preceding year by about $13,000.00, with practically no increase in operating expenses. This is palpable error and contrary to the rule adopted in the Chattanooga case.

(*b*) In failing to charge the plaintiff Company with the full amount of its income, even for the year 1900-1901 prior to the passage of the ordinance, which alone was reported upon. The income reported by the Master and adopted by the court for its action was $88,481.39. This was erroneous and too small by reason of the omission of the following items, to-wit:—

About $208.00 excess of accounts carried out at the end of the year over the amount of accounts carried in at the beginning of the year:

And about $2300.00 or $2400.00 for taps and supplies, which were likewise income accounts.

513 It was error for the court to refuse to adopt, as a basis for its action, the entire earnings and income of this plant, not only from water receipts, but from all other sources during the year.

(*c*) In refusing to take into consideration, for any purpose whatever, the fact or proposition that a reduction of rates is calculated to increase in some measure at least the business, and possibly the income of the company. There was not only a presumption of that character in this case, but actual proof that such would have been the fact. It was error to disregard this circumstance.

(*d*) In adopting the Master's division of income between City and outside City, while at the same time holding that such division was immaterial. The court adopts the general result obtained through this unnecessary division, though not approving the principle of making such division. In other words, the $3.35 per cent. return, which is calculated by the Clerk and adopted by the court, as the return that could be realized under the city ordinance, is the result of a calculation made by the Clerk, in which he assigns *11 per cent.* of income outside the city, and only *about 5 per cent.* of *operating expenses outside the city*, thus depriving the city proper of its due proportion of income, and making it bear an undue proportion of operating expenses, and in this manner, after assigning an undue proportion of the value of the plant to the city, the conclusion is reached that only 3.35 per cent. can be realized as a return to the plaintiff Company. This whole matter is based upon erroneous propositions.

In the Chattanooga case, decided by this Court, not only was the income of the year after the ordinance adopted as the basis, but in the division of income between city proper and outside city, outside

city was made to bear 20 per cent. of operating expenses, and allotted only 15 per cent. of income, which was obviously just,
514 as it costs more to deliver water at long distances than at short distances.

In disregarding the fact in making a comparison of actual income under the Company's rates and the potential income under the City ordinance, that the Company's rates make a discount of 5 per cent., while the city ordinance requires no such discount. So that, in comparing actual receipts under the Company's rates, with possible receipts under the city ordinance which makes a horizontal reduction, this 5 per cent. must enter as a very material consideration in the solution of the difference between the actual receipts of the Company under its own rates and its possible receipts under the prescribed city rates.

X.

The court erred in its ruling upon the question of operating expenses, as indicated by the defendant's exceptions to the Master's report, and by the evidence in the case, and also in its failure to rule upon same in the following particulars to-wit:

(*a*) In not having report of, and looking to the operating expenses of the year or some other period subsequent to the passage of the ordinance:—

(*b*) In failing to exclude from the category and account of operating expenses as presented and claimed by the plaintiff Company, the cost of this water rate litigation between the city and the Company, and such items as expenditures for "cigars" and "contributions to charitable" and other purposes; in failing to exclude the expense of maintaining an unnecessary office in Boston, Massachusetts, with a duplicate office at Knoxville, Tennessee, and in refusing to divide the salaries of officers that performed services in both "construction and operation" between operating expense account and the construction account and in permitting the same to perform services on both accounts, by unduly swelling them both.

515 XI.

The court erred in its determination that the horizontal reduction of the Company's rates by the City's ordinance was 22.88 per cent. It was at least 5 per cent. less than this, or about 18 per cent.

XII.

The court erred in its decision that the income realized under the city's ordinance would not afford a fair return to the plaintiff Company, and erred in not deciding that 4 per cent. would be ample income to rescue the ordinance from the category of a confiscatory ordinance, but in point of fact, upon consideration of the Company's income after the passage of the ordinance instead of before its passage, the income of this Company under the ordinance would be sufficient, after paying operating expenses and providing 2 per cent. for depreciation, to allow the plaintiff Company 6 per cent. return in addition to its taxes, which is more than sufficient to satisfy the demand of the law.

The Court erred in not holding that Plaintiff was estopped to contest or complain of the city ordinance rates by its conduct in refusing to give the City Council necessary information and in withholding evidence on the hearing.

Upon the foregoing grounds, the defendant excepts, and assigns errors to the decisions, decrees and rulings of the court in this cause.

J. W. CULTON,
PICKLE & TURNER,
Att'ys for Defendant.

516 (Endorsed:) The Knoxville Water Company, Plaintiff, *vs.* Mayor & Aldermen of the City of Knoxville, Defendant. No. 1260—In Equity. Exhibit A to Petition for Appeal. Filed Jan'y 21, 1907. D. L. Snodgrass, Clerk, By W. L. Edington, Dep'ty Clerk.

517 In the Circuit Court of the United States for the Northern Division of the Eastern District of Tennessee.

In Equity. No. 1260.

THE KNOXVILLE WATER COMPANY, Plaintiff,
vs.
THE MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE, Defendants.

Appeal Bond.

Know all men by these presents that we, the Mayor and Aldermen of the City of Knoxville, as principal, and G. W. Pickle and W. R. Turner are held and firmly bound unto the plaintiff, the Knoxville Water Company, in the full and just sum of $1000.00, to be paid to the said plaintiff, the Knoxville Water Company, its certain attorneys or assigns, to which payment well and truly to be made we bind ourselves, our heirs, executors and administrators jointly and severally by these presents.

Sealed with our seals, and dated this the 21 day of January in the Year of our Lord Nineteen Hundred and Seven.

Whereas lately at a Circuit Court of the United States, for the Northern Division of the Eastern District of Tennessee, in a suit depending in said Court between the Knoxville Water Company, plaintiff, and the Mayor and Aldermen of the City of Knoxville, defendant, certain decrees were entered against the defendant, the Mayor and Aldermen of the City of Knoxville;

And whereas the said defendant, the Mayor and Aldermen of the City of Knoxville have prosecuted an appeal to the Supreme
518 Court of the United States from said decree to reverse the same;

Now therefore, the condition of this obligation is, that if the above named defendant, the Mayor and Aldermen of the City of Knoxville, shall prosecute its said appeal to effect and answer all damages and costs that may be adjudged or awarded against it if

it shall fail to make good its said plea, then this obligation to be void, otherwise to remain in full force and virtue.

THE MAYOR & ALDERMEN OF THE
CITY OF KNOXVILLE.
G. W. PICKLE.
W. R. TURNER.

Approved by—
HORACE H. LURTON, *Judge, &c.*

519 (Endorsed:) Knoxville Water Company, Plaintiff, *vs.* The Mayor and Aldermen of the City of Knoxville, Defendant. No. 1260—In Equity. Appeal Bond. Filed January 21, 1907. D. L. Snodgrass, Clerk, By W. L. Edington, Deputy Clerk.

520 MONDAY, *September* 10, 1906.

Be it remembered, that at a Circuit Court of the United States begun and held for the Northern Division of the Eastern District of Tennessee, at the Federal Court rooms, in the City of Knoxville, within said District and the Sixth Circuit, on the second Monday, it being the 10th day of September, A. D. 1906; present and presiding the Hon. C. D. Clark, Judge of the District Court of the United States for the Eastern and Middle Districts of Tennessee, the following proceedings were had, to-wit:

MONDAY, *January* 21, 1907.

Court met pursuant to adjournment.
Present and presiding the Hon. C. D. Clark, Judge, etc.

No. 1260. In Equity.

THE KNOXVILLE WATER COMPANY
vs.
MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

Now comes the defendant in the above entitled cause, the Mayor and Aldermen of the City of Knoxville, and files its assignment of errors and its prayer and bond for appeal from the final and other decrees entered herein to the Supreme Court of the United States at Washington, D. C., and for reasons satisfactory to the Court appearing, said appeal is hereby granted and allowed, and a transcript of the record proceedings and papers upon which said decrees were made and of said decrees and orders duly authenticated, is ordered to be sent to the Supreme Court of the United States as prayed in said petition for appeal. This 21 day of January, 1907.
Enter this.

HORACE H. LURTON, *Judge.*

January 21, 1907.

Entered Jan'y 21, 1907, in Journal "S," page 280.

521 In the Supreme Court of the United States, at Washington, D. C.

THE UNITED STATES OF AMERICA, *ss:*

The President of the United States to the Knoxville Water Company, Greeting:

You are hereby cited and admonished to be and appear before the Supreme Court of the United States at Washington, D. C., within thirty days from the date hereof, pursuant to an appeal duly allowed by the Circuit Court for the Northern Division of the Eastern District of Tennessee, and filed in the Clerk's Office in said Court, at Knoxville, Tennessee, on the 21st day of January, 1907, wherein the Mayor and Aldermen of the City of Knoxville is appellant and you are appellee, to show cause, if any there be, why the decrees rendered against the said appellant, as in said appeal and assignment of errors mentioned, should not be corrected and reversed, and why speedy justice should not be done to the appellant in that behalf.

Witness the Hon. Melville W. Fuller, Chief Justice of the Supreme Court of the United States. This the 21 day of January, 1907.

HORACE H. LURTON, *Judge.*

522 THE KNOXVILLE WATER COMPANY, Plaintiff,

vs.

THE MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE, Defendant.

Marshall's Return.

Came to hand this January 22nd, 1907. Search being made, and no President, Vice-President, director, or other higher officer of the plaintiff, Knoxville Water Company, being found in my district, I served the foregoing citation upon H. M. Aiken, resident manager of said Knoxville Water Company, he being the highest officer or agent thereof to be found in my district, by reading the same to him, and leaving a copy thereof with him. I also served said citation upon R. E. L. Mountcastle one of the counsel of record for said Knoxville Water Company, and citing said Company to appear as above commanded. This Jan. 22nd, 1907.

W. A. DUNLAP,
U. S. Marshall for the Eastern District of Tennessee,
By GEORGE W. SHARP,
Deputy Marshall.

(Endorsed:) No. 1260. The Knoxville Water Company, Plaintiff, *vs.* Mayor and Aldermen of City of Knoxville, Defendant. Citation. Filed this Jan. 21st, 1907. D. L. Snodgrass, Clerk, By W. L. Edington, Deputy Clerk.

523 In the Supreme Court of the United States, at Washington, D. C.

THE UNITED STATES OF AMERICA, *ss:*

The President of the United States to the Knoxville Water Co., Greet-:

You are hereby cited and admonished to be and appear before the Supreme Court of the United States at Washington, D. C., within thirty days from the date hereof, pursuant to an appeal duly allowed by the Circuit Court for the Northern Division of the Eastern District of Tennessee, and filed in the Clerk's Office in said Court, at Knoxville, Tennessee, on the 21st day of January, 1907, wherein the Mayor and Aldermen of the City of Knoxville is appellant and you are appellee, to show cause, if any there be, why the decrees rendered against the said appellant, as in said appeal and assignment of errors mentioned, should not be corrected and reversed, and why speedy justice should not be done to the appellant in that behalf.

Witness the Hon. Melville W. Fuller, Chief Justice of the Supreme Court of the United States. This the 21 day of January, 1907.

HORACE H. LURTON, *Judge.*

524 THE KNOXVILLE WATER COMPANY, Plaintiff,

vs.

THE MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE, Defendant.

Marshall's Return.

Came to hand this January 22nd, 1907. Search being made, and no President Vice-President, director, or other higher officer of the plaintiff, Knoxville Water Company, being found in my district, I served the foregoing citation upon H. M. Aiken, resident manager of said Knoxville Water Company, he being the highest officer or agent thereof to be found in my district, by reading the same to him, and leaving a copy thereof with him. I also served said citation upon R. E. L. Mountcastle one of the counsel of record for said Knoxville Water Company, and citing said Company to appear as above commanded. This Jan. 22nd, 1907.

W. A. DUNLAP,
U. S. Marshall for the Eastern District of Tennessee,
By GEO. W. SHARP,
Deputy Marshall.

[Endorsed:] The Knoxville Water Company, Pl't'ff, *vs.* Mayor & Aldermen of the City — Knoxville, Def'd't. Citation. Filed Jan'y 21, 1907. D. L. Snodgrass, Clerk, By W. L. Edington, Dep. Clerk. Marshal's Costs 2 Summons @ 2.00 4.00. Filed Jan. 22 1907. D. L. Snodgrass, Clerk.

525 THE KNOXVILLE WATER COMPANY
vs.
THE MAYOR & ALDERMEN OF THE CITY OF KNOXVILLE.

The depositions of William Wheeler and —— ——, witnesses for the plaintiff in the above styled cause, taken at the United States Court Room, Knoxville, Tennessee, on the 10th day of November, 1902, by agreement of counsel for both parties, before Henry O. Ewing, Esq., Special Commissioner, and in the presence of said Special Commissioner and W. R. Turner, Counsel for Defendant, and C. T. Cates and J. W. Caldwell, Counsel for Plaintiff.

First witness WILLIAM WHEELER, of lawful age, being duly sworn, deposed as follows:

Examination by J. W. CALDWELL:

Q. Mr. Wheeler, where do you live?
A. In Concord, Massachusetts.
Q. Where is your place of business, and what is your occupation?
A. My place of business is at Boston, Massachusetts, my occupation is that of a Civil and Hydraulic Engineer.
Q. How long have you followed that occupation?
A. Upon my own account since 1870 to some extent; continuously since 1871, with the exception of four years, during part of which time I was teaching, of the remainder I was Civil Engineer to the Colonial Department in Japan.

526 Q. Are you acquainted in any way with the plaintiff in this cause, the Knoxville Water Company?
A. I am.
Q. In what capacity?
A. As President of the Company, and as its Supervising Engineer.
Q. How long have you occupied these relations to the Company?
A. As Supervising Engineer since about 1892; as President since 1896 or 1897 I think. I am not quite certain of the date.
Q. To what extent are you familiar with the affairs and the conduct of said Company since the time when you became connected with it?
A. I am generally familiar with the general proceedings of the Company since 1891, and its general history since September 1890.
Q. The Charter of the Company has been filed as an exhibit to the bill in this cause, but for the purpose of this examination, I will ask you to state here when that charter was procured, if you remember?
A. In 1882.
Q. Are you acquainted with the details of the history of the Company since 1882, until the time when you assumed an official relation to it?
A. In respect to some of the details I am, but not in respect to the financial details.

Q. I mean have you any personal knowledge of those details?
A. I have not.
Q. Are you a stockholder of the Company?
A. I am.
Q. When did you acquire your stock?
A. My first stock interests were acquired in December, 1890.

Q. Was there any considerable change in the ownership
527 of stock in the company about December, 1890?

A. Yes, there was.
Q. Did that change affect a majority of the stock?
A. It did.
Q. By that change who came into the ownership of the majority of the stock?
A. Charles F. Parks and William Wheeler, under the firm name of Wheeler & Parks.
Q. Prior to that time who had owned a majority of the stock?
A. Citizens of Knoxville; Mr. C. M. McGhee, R. N. Hood, E. J. Sanford, Mr. Samuel McKinney and Frank McNulty. I will name others if you wish, but the first three whom I have mentioned were those of whom the controlling interest was acquired in December 1890.
Q. Did the gentlemen whom you have named retain any shares in the company?
A. I think not.
Q. Were the officers of the company changed at or about the date you have mentioned, December, 1890?
A. I think they were within a few months after that time—perhaps during that month.
Q. It is suggested to me that possibly you have overlooked the fact that Gen. Hood remained nominal President of the Company for some time after 1890. I will ask you to state how that is?
A. I think that is a fact.
Q. How long did Gen. Hood continue to be President?
A. I think he continued President of the company until final payments were made for the stock of Mr. McGhee, Mr. Sanford and himself, for which the negotiations were made in December
528 1890. The length of time I am not quite sure about, but I think until a year or more after that date.
Q. Was he President at the time of his death?
A. I think he was.
Q. Before proceeding further, please state what experience you have had in the management, construction and operation of Water Works plants, and the length of time covered by that experience?
A. Much the larger part of my experience as an Engineer has been devoted to the designing and construction of Water Works, both for municipalities and for private companies. That experience in designing and construction of Water Works began in 1873. I have designed and constructed municipal Water Works in Concord, Massachusetts, in Canton, Massachusetts, in Somersworth, New Hampshire—the completein works in those cases, and been employed as Consulting Engineer for the extension of the works and

the increase of Water supply in the City of Gloucester, and the town of Braintree, Massachusetts. I have designed and constructed as Engineer the works of Water companies at Belfast, Maine; at Exeter and Derry, New Hampshire, at Watertown, Massachusetts, Cottage City, Massachusetts and at Braintree, Massachusetts, this being afterwards purchased by the town, and since which purchase my services as Consulting Engineer for the town have been rendered—Putnam, Connecticut Danielson, Connecticut, Stonington and Groton, Connecticut; Portland, Connecticut; Pulatka, Florida; Paris, Kentucky; Winchester, Kentucky; upon the extension of the works at Ashland, Wisconsin, the Water Works and Irrigation Works of the Lewiston Water and Power Company in the State of Washington, and in connection with the Works at Knoxville, & North Knoxville. In
529 the Works of these private companies which have been designed, built and completed under my supervision as Engineer, Mr. Parks was associated with me, as a partner, excepting therefrom the Works of the Watertown Water Company and the Lewiston Water & Power Co. In the management of Water Works, I have been identified with most of the works to which I have referred that are owned by private companies, as supervising or consulting Engineer, and in some of them as a director. I am also Chairman of the Water Commissioners and the Sewer Commissioners at Concord, Massachusetts, the works being owned by the municipality.

Q. Have you given any attention to the study and determination of Water rates and fair prices to be paid for water service?

A. I have.

Q. Please state the extent of your examination into those various questions?

A. First, in connection with the various companies whose Works I have designed and built, I have had to do with preparing the schedule of Water rates adopted by those companies I have served as a member of Board of Commissioners to determine a fair price to be paid by the commonwealth of Massachusetts to the town of Danvers, Massachusetts, for the water supplied by the town to the State Insane Asylum located there; I have revised schedules on water rates used in my own town and adopted by the Water Commissioners, and made a study of the fair value of the water service for the Lewiston Water and Power Company, both for supplying its domestic consumers, and for supplying a neighboring municipality.

Q. Have you ever been called upon to give expert testimony in Water rate and sale cases?

A. I have.

Q. To what extent if you please?

530 A. I was employed as an expert in the valuation of the Works at Braintree, Massachusetts, sold to the town, at Haverhill, Massachusetts, Quincy, Massachusetts, West Springfield, Massachusetts, Meridian, Mississippi, that being a case of appraisal under an option of the city to acquire the Works, at Fulton and Oswego Falls, New York; at Watertown, Massachusetts; and the fair value of the supplying sources and Works of the city of Boston, which were

recently taken by the Metropolitan Water Board of the state, of the Gloucester Water Works acquired by the city, and the valuation of Water Works at Dover and Foxcroft, Maine, which have recently been appraised by a Commission under an option by the Fire company to take the property, and I am also employed now in similar cases at Gardner, Massachusetts, and at Waterville, Maine. I also served as one of the Referees (subsequently to making a report for the Water Company) upon the value of the property at Fulton and Oswego Falls, New York. I was appointed one of the referees to succeed one who had died during the time of my previous service of the company. I served as Auditor in the valuation of the Water supplying source in the town of Avon, Massachusetts.

Q. Mr. Wheeler, generally and as briefly as possible, what is the nature of the services performed by the Consulting Engineer?

A. Well the services of a consulting Engineer are usually of a special character, incident to some special work as for instance the advice in respect to the management or construction of works, the increasing of the supply, or they may be of a continuous nature for performing similar services as they may arise from time to time.

They have to do especially and peculiarly with questions of
531 construction. The services to which I testify in most of these cases, were those of Supervising Engineer, but primarily and properly had reference to matters of maintenance and operation.

Q. Referring again to the classification of services, I will ask you to explain briefly the general line of the work required of you and performed by you as an expert, as you designate it?

A. With reference to valuations?

Q. What generally do you include under that term "expert"?

A. I have never before found myself called upon to define the duties of an expert; but answering the question, I understand expert service to consist of service involving special skill, or special technical knowledge arising from experience and study of authorities upon that subject—from the study of standard, practice and principles.

Q. It is in that sense you have used it in your classification of services above?

A. It is.

Q. Have you had any experience in the care and direction of investments and financial interests?

A. I have to some extent.

Q. Please state to what extent?

A. Well I am a Trustee and Vice-President of a Savings Bank or "Institution," a Director of a National Bank, a Director of a Mutual fire insurance company, a Trustee of a public Library having charge of the funds for the maintenance and care of the library, a Trustee of a certain Parish or church organization funds, am a Trustee of the Massachusetts agricultural college in which matters of the investment of the funds of that institution are dealt with by the Trustees, and I have had to do with loans and the sales of bonds

issued by the Water and Sewer Commissioners, of which I am
532 one and of which I have testified, in addition to my experience in negotiating the securities of the Water companies

whose works I have built as Engineer and as contractor. I am also the Treasurer of two Water companies.

Q. Have you given attention to the subject of the financial management of water plants as well as engineering questions involving same?

A. I have.

Q. Are you familiar with the operation and management of Water Works plants with reference to financial management as well as Engineering?

A. I am to a considerable extent.

Q. Have you read the order of reference in this cause with the defendant's additions thereto?

A. Yes sir I have.

Q. I omitted to ask you if you held any academic degree of any kind. I will ask you that question now?

A. I am a graduate of the Massachusetts Argicultural College, and hold the degree of Bachelor of Science; I am a member of the American Society of Civil Engineers, of the Boston Society of Civil Engineers, of the American Association for the Advancement of Science, and the New England Water Works Association.

Q. You spoke awhile ago about holding some position in Japan; what was the position you held there and the nature of the work you did?

A. I was employed by the Japanese Government in 1876 as Professor of Mathematics and Engineering for a term of two years, and during that time was appointed President of the institution in which I served, later was appointed Civil Engineer to the Colonial
533 Department, and continued such until early in 1880, when I returned to the practice of engineering in America.

Q. Do you consider yourself reasonably qualified to testify as to the elements which determine fair and reasonable water rates?

A. I think I am.

Q. Then what are the elements which determine fair and reasonable water rates?

A. *First:* As to the gross amount which should be realized from water rates: It should be sufficient to provide for various classes of expenditures and charges, comprising *1st* necessary and proper operating expenses, including fair salaries and compensation for management and skilled services employed therein; *2nd* taxation of all kinds; *3rd* the maintenance and repair of the various parts of the physical plant so that it shall be maintained in an efficient condition for use during its useful life; *4th* suitable allowances for depreciation and renewals to make good all portions of the plant at the end of their useful life, whether such portions are to be replaced or not, as well as proper allowances for all needful and prudent alterations; *5th* the interest on the fair amount of the capital invested, comprising under this head:—

(*a*) On all bonds, notes and other evidences of debt prudently and needfully issued, subject to such discounts, commissions and brokerage as were necessary or proper to secure the requisite funds under the conditions existing at the time of such issue, as well as for the renewal of such securities:

(*b*) On all cash advanced and services properly rendered by the organizers and promoters of the enterprise:

534 (*c*) On the value of what is known as the "going concern" or the going value of the plant.

6th. If the capital invested is subject to further loss beyond what would be provided for by the depreciation and renewals referred to under "4th" by reason of cosiderations that are foreseen; that is, such as termination of the franchise, or from other considerations, such as forced sale, competition, or radical changes in the supply or in the service, a sinking fund, or a guarantee fund should be created to make good the loss of capital likely to ensue from such causes:

Second. As to the specific items of any schedule of rates for different classes and amounts of water service, they should be consistent in their relation to each other, and equitable as affecting different consumers. I think that defines the elements as they occur to me.

Q. Referring to your first item "necessary and proper operating expenses" please state what you include under that head?

A. That includes the salaries and wages of the officers and employés engaged in the management and operation of the plant, cost of fuel and supplies required for such operation and maintenance, and all the general expenses which are needfully incurred in such operation and maintenance.

Q. In classifications of this character, is taxation invariably treated as a separate item, or included under the head of operating expenses?

A. Technically, I do not think taxes are an operating expense. They are one of the necessary charges incurred in the operation and maintenance of the plant and in conducting its business. But

535 I think they are usually classified or accounted for in the books under special ledger headings.

Q. In its effect upon the question of reasonableness of rates does it differ at all from operating expenses?

A. Not at all.

Q. I will ask you to draw the distinction between operating expenses and maintenance and repair?

A. Maintenance and repair covers the making good of wear, injury or impairment arising from operation and from natural causes as it becomes necessary from year to year in the operation of the plant, operation has to do with the expenses involved in running the plant. I distinguish between maintenance and repair on the one side and depreciation on the other in that, depreciation deals with impairment which is not made good currently by repair or maintenance expenditures, but which ultimately results in the disuse of portions of the plant. That disuse may result from impairment through natural causes—deterioration—or from being outgrown in capacity by the growing needs of the plant or service, or by changes in the nature of the works made necessary by changes in the service or changed conditions affecting the service or the source of supply. To make good such impairment and changes not covered by the annual payments and disbursements for repair, allowances should

be made to cover such impairment on change when they shall accrue, and such allowances are properly made by charges against current revenue, or else by leaving in the capital account permanently the original investments made for such portions of the plant, as well as for such additional or alternative construction as is needful at the end of the life of such portions as are discontinued.

Q. I will ask you to define fully what you mean by the
536 term "depreciation"?

A. Depreciation comprises all impairment of the plant or capital not made good by current expenditures for repair and maintenance to such an extent as is necessary to protect and afford a fair return on all capital legitimately and properly invested therein. Depreciation operates until satisfied out of income or earnings as a reduction of physical value. If the earnings are sufficient, depreciation would be properly provided for by the creation of a depreciation fund which would suffice to refund the capital, or else to replace the plant which it represented at the end of the life of the plant for which that capital was originally invested. So that depreciation operates to increase the charges to be satisfied out of rates, but to diminish physical value—to diminish sale or taxable value—just as an increase in operating expenses, or in repair or in maintenance charges operates to increase the demand to be laid upon income or rates, but to diminish the valuation of the property as determined by the net income derived from those rates.

Q. Does the depreciation ever cease during the existence of the plant?

A. It does not.

Q. That being obviously true, generally are there not portions of the plant, as a rule, in which the depreciation does become complete?

A. Depreciation does become complete upon any portion of the plant, which for any necessary or proper reason becomes unsuitable for further use—then depreciation upon that portion has become complete.

Q. But as to the process of depreciation itself, I under-
537 stand that that does not become complete?

A. That does not cease with reference to any portion of the plant which continues in use.

Q. Referring to your 5th item in first sub-head, and not consuming the time to inquire as to interest on bonds, notes and other evidences of debt, I will ask your meaning where you say that interest should be allowed on "commissions and brokerage as were necessary to secure the requisite funds under the conditions existing at the time of such issue as well as for the renewal of such securities."

A. An issue of mortgage bonds, or negotiation of notes, or of loans for purposes of raising capital for an enterprise of this sort or for any sort so far as I know, is subject to certain charges and expenses in the nature of commissions or of discounts from the face value of the securities issued according to the rate of interest which they bear and to the security upon which they rest. Such issue of bonds are usually marketed through brokers, and accord-

ing to locality, the nature of the property or of the enterprise, and the rate of interest, have to be sold subject to discount. By reason of that fact it is necessary to make the face value or amount of the securities so issued to that extent greater than the amount of capital necessary to be raised thereon, and that is the nature of the discounts, commissions and brokerage referred to under this head.

Q. Are you able to say whether or not in financial transactions involving the marketing of securities such allowances are usual?

A. They are. They are usual and usually necessary.

Q. Are they usual and usually necessary in the marketing of Water Works securities?

538 A. They are; even in marketing the securities which are a first lien on the entire property, or a portion only of the capital, that is necessary—that is to say where the security is of the best which that particular enterprise can afford, like mortgage bonds.

Q. Are Water Works bonds regarded in the money market as affording a maximum security?

A. Private Water Company bonds are not, unless we except certain long and well established works, the success and security of which is beyond reasonable doubt or fear of impairment in the mind of investors.

Q. As applied to the facts of this case, and in view of the history of this plant, do you regard such an allowance as reasonable in this case?

A. I do.

Q. How far, if you know, have such allowances been approved by experts or by tribunals of any kind in Water Works cases?

Counsel for defendant objects to the question and answer thereto as being incompetent and inadmissibl- to the issues submitted in this cause.

SPECIAL MASTER: I cannot foretell what the answer will be; let him answer it.

Mr. TURNER: It is not for the witness to prove precedents.

A. Such allowances are made by engineers and by experts in considering of the amount of securities that must be issued to finance Water Works properties. In certain instances I have known them to be allowed far in advance of the construction, to an advance of ten per cent.—I have known them to be required to even a

539 larger extent in the actual prosecution of the undertaking.

Mr. CALDWELL: Will your Honor pass upon the exception?

SPECIAL MASTER: The exception is over-ruled.

Q. As distinguished from the matters in regard to which you have just been testifying, what do you mean by cash advanced and services rendered by the organizers of the enterprise?

A. That is intended to cover the services which are required in conceiving, initiating and carrying out of an enterprise of this sort; to such extent as such services are not compensated by cash allowances entering directly into the book accounts, I would say, or which are not provided fo- in any estimate designed to cover simply con-

struction cost. It is an allowance which should fairly cover the value of the services rendered in initiating and negotiating, and under the general term of properly promoting such an enterprise, and in assuming the risks which the most prudent fore-sight would be subject to.

Q. You have used in your testimony above the phrase "going concern." I will ask you to state fully for the benefit of the court the exact significance of that phrase as you use it?

A. The "going concern" or what has been called the going value of a plant, is in general the difference between the value of a plant with, and that of a plant without an established or going business; between the plant or property the business of which has already been acquired or created and developed and that of another plant identically like it——

SPECIAL MASTER (interrupting): In its experimental
540 stage?

A. Yes sir, and in the same location that (it) has yet to acquire and build up its business. Now the actual value of the going concern may consist in part, of or may represent the deficiency of earnings to afford a fair return on the capital during the time when the business is being developed and built up, and it may in part embody special services or skill involved in the building up and developing of that business, if such services comprise any that are not compensated in the allowances for operation or maintenance or administration. The larger part, I think of the value in the going concern represents in effect the difference between the value of a plant with a business already fully developed as of the time when the value is being determined, and the value of the same plant without that business. It consists in, or is substantially equivalent to the deficiency of earnings to meet or provide a fair return on the property during the period of the development of the business, and as such, it is in effect an interest charge during the non-productive period of the plant.

Q. Mr. Wheeler, please state a little more fully what you mean by the "sinking fund" or "guarantee fund" referred to in the 6th sub-division above?

A. Well it is in the nature of such a guaranty fund as savings bank- in many of the states are required to create——

The COMMISSIONER: For possible losses thereafter?

A. Yes sir—and created out of the earnings upon deposits as a safe-guard against losses of unusual or unforeseen character; or the reserve commonly carried by Mutual Insurance Companies, and perhaps other insurance companies, even in excess of the re-
541 quirements of the statutes to cover their risks; or the undistributed earnings of a national bank held in reserve for similar purposes, or to secure the payment of a fair dividend in a poor year in the face of special losses; or of a contingency or surplus account created and maintained by a manufacturing or other corporation to guard or provide against any unforeseen risks or losses in bad times. It is, in effect the policy of earning a little more than you are assuredly obliged to spend, or of spending not quite all you earn.

Such a fund would be properly created by providing earnings sufficient to fill it in a small amount each year until it reached a certain prudent amount, and then to maintain it upon about that basis—after the manner of filling a guaranty fund in a Savings bank.

Q. I wish you would explain a little more fully with reference under the 2nd sub-division above to "specific items" of schedule?

A. That point was brought out in an examination of the particular rates which are under discussion here, from which it appears that in the schedule of meter rates provided in the City's Ordinance of March 30th 1901, they are so framed that $12.00 per month will pay for 75,000 gallons of water at 16 cents per thousand gallons. The same amount will pay for 100,000 gallons of water at 12 cents per thousand, and the same amount will pay for 150,000 gallons of water at 8 cents a thousand gallons. Thus, while in form a sliding scale, it is in fact an unbalanced schedule, the effect of which would be to permit the use by any customer of increasing quantities of water without compensation therefor, while another result would
542 be one customer might use but 75,000 gallons of water per month and be required to pay the same sum as another customer using twice as much.

The further taking of depositions was continued until 2 o'clock P. M. Nov. 10, 1902.

Nov. 10TH—2 o'clock p. m., 1902.

The further taking of deposition of WILLIAM WHEELER resumed.

Examination continued by Mr. CALDWELL:

The SPECIAL COMMISSIONER: The defendant having asked for the rule as to witnesses, the Master permitted the complainant to select one officer of the Water Company, Mr. William Wheeler to remain during all the testimony; the Master also permitted General Elbert Wheeler to remain, and to the ruling in permitting General Elbert Wheeler to remain, the defendant excepted, and the Master having looked up authority now considers that General Elbert Wheeler should be excluded the same as other witnesses, and from this point on he is excluded from the room.

Q. In regard to the matters last testified about Mr. Wheeler I hand you exhibit # 8 to the bill filed in this cause which is the ordinance of the city of March 30th, 1901, and ask you to point out that part, or at least one part of said ordinance to which your last answer applies, and to illustrate your meaning further, if you can do so?

A. On the 5th page of this exhibit under the head of
543 "Meter Rates," the following rates are provided: "50,000 to 100,000 gallons monthly, 16 cents per thousand gallons." Under that rate the cost of 75,000 gallons used in one month would be $12.00—75.000 gallons of water at 16 cents $12— The next rate named is from "100,000 to 150,000 gallons monthly at 12 cents per thousand gallons"; Under that rate the cost of 100,000 gallons used in one month at 12 cents would be $12.00; that is the same as for 75,000 gallons under the previous rate. The next rate in the

schedule is "150,000 to 200,000 gallons monthly at 8 cents per thousand gallons" Under that line of the schedule the cost of 150,000 gallons used in one month would be the same price as before at 8 cents per thousand gallons—$12.00. I want to say that I have not examined the whole of this schedule critically in that way, but that appears to me from a casual examination of the schedule to merely illustrate the point which I made under the "Second" general class of elements to be considered.

Q. How many kinds of cases are there that require valuation of Water Works plants?

A. There are three kinds that occur to me in which some aspect of valuation is involved; one is the fair exchang- value, or market value, which is involved in the determination of the price to be paid by a new owner to the past owner who has relinquished the property; another is, the determination of fair rates which involves the consideration, or determination of fair invested values or costs, and another is the determination of taxable values. These three classes of cases or purposes for which the elements of value are determined, as I understand them involve certain elements which are com-
544 mon to all of them. It is barely possible that the consideration of franchise is not involved in all of them under certain conditions governing franchises, or certain conditions governing the power to regulate rates. But with that exception, I think the elements to which I have referred this morning apply to all those kinds of valuation. There are some of these elements, which while they may appear to operate differently in different classes of cases—in different ones of those cases—are not in effect inconsistent with each other; for instance as stated this morning the consideration of depreciation while it increases the demand to be laid upon rates, and therefore increases the fair and reasonable rate, diminishes value for exchange purposes, but that is in direct harmony with the principle that the larger the return which must be made upon a given property to afford fair compensation to the investor, the less the value in the absence of that return, in the same manner as the larger the operating expenses the less the value of the property; the larger the ruling rate of interest, other conditions being the same, the less the value of the equity in property, the ruling rate of interest upon the bonds, I mean by this, bonded property—the larger the repair account the less the value the larger the burden the greater the return necessary to be provided in fair and reasonable rates. So that those two aspects of the considerationn of depreciation which have often been invoked in these cases which appear to be adverse, are in strict and necessary accord with each other.

Q. Id I understand you then, all of the six classes of items that you mentioned this morning, properly enter into all of these classes of cases?

A. I think they do.

545 Q. Are you acquainted with the physical condition and values of the property of the Knoxville Water Company?

A. Yes sir I think I am.

Q. Since you became connected with the Knoxville Water Com-

pany, have any considerable alterations or additions to the property been made?

A. There have been large additions and alterations made—relatively large.

Q. Who supervised the works of the defendant's alterations and additions?

A. I did chiefly.

Q. Have you made an analysis or distribution of the physical property of the Knoxville Water Company, and if so I will ask you to present first, a statement of the distribution you have made, showing the several items in the aggregate before going into a detailed analysis.

A. I have made such a distribution and classification, and this is a summation—this is a statement of that classification—a summation of the construction costs as I have estimated it of the various classes of work entering into the physical plant:

"Classification and fair construction cost of the physical plant of the Knoxville Water Company to March 31st, 1901, not including administration services, legal services, litigation, charter and franchises charges, and expenses, nor the costs and arrears expended and incurred in creating and building up the business, in creating the element known as "Going Concern."

Classification by number and letter.	Construction cost of plant to M'ch 31st, 1901.
(1)	(2)
1. Real estate	$25,422.00
2. River station, etc	
A. Engine house, etc	32,775.99
B. Boiler house, etc	5,048.94
C. Tool and storage house, etc	500.56
D. Chimney, etc	2,463.74
E. Coal chute, etc	2,546.59
546 (Continuation:)	
F. Store house, and fencing, etc	499.80
G. Pumping engines, etc	53,029.63
G. Boilers, etc	17,868.00
H. Stairs, grading, etc	1,718.40
I. Intake tower, etc	10,245.00
3. Reservoir	33,126.00
4. Distribution pipes, etc	367,858.23
5. Service pipes, etc	8,574.00
6. Meters, etc	8,842.70
7. Tools, etc	6,150.00
9. High service and filter plant	
A. Buildings, etc	18,271.10
B. Engines, etc	4,348.98
B. Boilers, etc	2,598.00
C. Filters, etc	36,091.56

D. Fencing, grading, etc.	1,100.40
10. Stand pipe	13,505.89
11. L. B.—Real estate improvements	35,700.00
12. L. B.—Buildings and Machinery	15,420.00
13.—L. B.—Stand pipe	7,680.51
	$711,379.51

Q. Turning now to the first class "Real estate" value $25,422, I must ask you now to state the items included under that head with your valuations of each of the same, and the method adopted by you in reaching such valuation?

A. The Schedule, a summary of which I have just put in, is a statement of all of the physical plant, as it had been created up to March 31st. 1901. (P. 22 to 113.)

In my analysis of it, I have detailed first that portion of the plant which existed in 1890, as we found it on coming into possession of the property at that time.

547 *Real Estate and Plant of the Knoxville Water Company of Tennessee.*

I.

At the Time of Purchase by Wheeler and Parks, Dec., 1890, with the Additions Made during 1891.

1. Real estate:

A. At River pumping station fronting 100 ft. on Craig Street by 150 feet in depth toward river thence 150 feet wide about 320 feet to the river containing about 64,500 sq. ft. purchased from City of Knoxville by deed dated July 27th, 1882.

B. Block enclosed by Condon, Lee, Payne and Patterson Streets containing the reservoir.

Area—220 x 300 ft. 66,000 sq. ft.

Purchased from city by deed of July 27th, 1882.

Price paid for A. and B.	$7,800.00

C. Block enclosed by Condon, Pritchard, Payne and Lee Sts. (on which filter plant and high service station were built in 1894).

Area 66,000 sq. ft.

Purchased through E. J. Sanford, Dec., 1887 at	2,950.00

D. Fronting 50 ft. on Craig St. by 150 ft. in depth.

Purchased by E. S. Shepard, Oct., 1889	900.00
Total	$11,650.00

2. Plant and improvements at River station:

A. Engine house and pit. Brick 45'–4" x 35'. (Supposed to have been constructed in 1883, and since replaced in part and enlarged.)

a. Below ground line (about grade 52.00):

Earth excavation and regrading 560 cu. yds. at .30		$168.00
Rock excavation, 1475 cu. yds. at $1.87½		2,765.63
548 Wall of engine Pit, 90,000 brick laid complete in hydraulic cement at 15.00		1,350.00
Foundations of building from rock bed 45,000 brick laid complete at $15.00		675.00
Suction pipe tunnel through rock with brick lining 38.5 feet long at $20. per foot		770.00
Cement floor 735 sq. ft. at 16⅔ c. laid		122.50
Wooden floor $40		40.00
Spiral stairs, all in place		250.00
Total		$6,141.13

(*b*) Above ground line 75 M brick laid complete in lime mortar at $13.00		975.00
10 window sills set at $4.00		40.00
One door sill set at $7.50		7.50
10 large (12″ x 18″—18 lights) and 2 circular windows (33″ in diameter) & Frames, set at $10		110.00
One door and frame $12.00		12.00
Roofing including Monitor top—frame 3250 ft. B. M. $14 per M.		45.50
Boarding, 2750 ft. B. M. 22.00 per M		60.50
Slating 18 Squares at $7.00		126.00
Flashing gutters and conductors $25		25.00
Railing around pit		75.00
Flooring around pit 1000 ft. flooring at 22		22.00
1050 feet joists at 14.00		14.70
Hardware, nails, etc., for building		100.00
Carpenter work		224.00
549 Painting		80.00
Office frame partition complete		50.00
Making total		$1,976.20

Total for engine house and pit, $8,108.33.

Add for engineering (6%) contractor's services, expenses, risks and profits (12%) and interest on capital during construction (3%.)

Those three amount to 21%. I have used for a percentage covering all 20%	1,621.87
Added to the footing above gives	9,730.00

B. Boiler house frame, sides and roof, covered with iron 50 feet by 38 ft. (as enlarged about 1889, and since replaced with brick boiler house of enlarged dimensions) which now stands there.

Foundations and footings 46 cu. yds. of rub-le stone work laid in cement mortar at 3.50	161.00	
Frame work, lumber for walls and roof, including Monitor top 5500 ft. B. M. at $16.00 per M.	88.00	

Corrugated iron plates for sides 18.4 sqs. at $2. per sq.	55.00	
Flat iron roof covering 26 squares at 4.50	117.00	
One window 12" x 14"	8.00	
7 doors with transoms at $10.00	70.00	
2 doors without transoms at $6.00	12.00	
Hardware nails, etc.	50.00	
Carpenter work	175.00	
Painting	50.00	
Brick paved floor, laid on edge complete, 7500 brick at 13. per M.	97.50	
		$883.70
550 Add 20% as above for items		176.74
Making total		1060.44

C. Tool and storage house frame 22' x 16' (since moved to east side of lot and later replaced with brick building).

Foundation piers or footings 1200 brick at $15.00	$18.00	
Frame, lumber for walls and roofing 1600 ft. at 14.00 per M.	21.00	
Boarding 2000 ft. at 14 per M.	28.00	
Shingles	10.00	
Door and frames	5.00	
Windows and frames	10.00	
Hardware	12.50	
Carpenter work	30.00	
		134.50
Add 20%		26.90
Total		$161.40

D. Chimney, iron stack 42" x 80' high on brick base with inclined iron flue 42" diameter x 112 ft.

2 boilers uptakes (replacing original stack and since replaced by short stack and induced draught).

Brick foundation and base 9750 brick laid in cement at $15.00	146.25	
Iron clean out door and frame	10.00	
Cast iron bed plate for stack 4220 lbs. at 2½ cts.	105.50	
551 Weight of stack and flue (at ⅜" thick) 31,686 lbs. at 4½ c. per lb. erected 1425.87 8 guy ropes (wire ropes) ¾" in diameter x 175 ft. long, each 1400 ft. weighing 1232 lbs. at 12½ c.	154.00	
Anchorage for guy ropes, eight, at $8.00 each	24.00	
		$1,865.62
Add 20%		373.12
Total		$2,238.74

E. (*a*) Coal chute:

About 3 ft. wide by 1 ft. high x 240 ft. long of wrought iron plates about ¼" thick on wooden trestle. (Since replaced with new coal chute and later with new coal shed of brick and frame construction.)

Weight of iron work 13092 lbs. at 3 c. erected.	392.76	
Lumber in supports or trestles 2500 ft. B. M. at $14. per M.	35.00	
Labor on same hardware, etc.	25.00	
		452.76
Add 20%		90.55
Total		$543.31

E. Store house. Frame 38′ x 14′ on Craig St. end of the lot (since removed).

Foundations of brick piers 1100 brick laid at $15.	16.50	
552 Frame, lumber, for walls, roof and floor 1750′ B. M. at $14.00 per M.	24.50	
Boarding and flooring 2800′ at $14. per M.	29.20	
Shingles	15.00	
Windows and frames 2 at $6.	12.00	
Doors and frames 3 at $5.	15.00	
Hardware	17.50	
Carpenter work	42.50	
		$182.20

F. Fence 125′ long by 10′ high with double gate:

16 posts at 50 c. each $8.00	8.00	
451 ft. of lumber for rails at $14.00	6.30	
1250′ boarding at $14	17.50	
Extra for gate	4.00	
Hardware	3.50	
Labor, erecting, etc.	20.00	
		$59.30
		241.50
Add 20%		48.30
Total		289.80

G. Pumping machinery and appurtenances (since replaced with machinery of greater capacity).

(*a*) 2 Davidson single, compound, direct acting, double plunger, pumping engine, each having 18″ high pressure steam and 34″ low pressure steam cylinders 16″ water plungers with 24″ stroke outside connection;—also 2 Davidson single direct acting
553 air pumps and condensors each having 8″ in steam & 12″ water or vacuum cylinders with 14″ stroke—also 1 Davidson feed pump with 5½″ steam cylinders 3¼″ water cylinder, and 8″ stroke, estimated cost F. O. B. cars

Knoxville	$10,000.00	
Cartage, erection, etc.	1,000.00	
		$11,000
Add 20%		2,200
Total		13,200

(*b*) Foundations for Davidson Machinery, of cast iron I beams, set in brick masonry with holding down bolts, etc., complete...	1,250.00	
Add 20%	250.00	
		1,500
		$14,700.00

(*c*) Suction and discharge pipes and connections. (Since replaced by plant of greater capacity.)

Main suctions. About 156′ of 20″ cast iron suction pipe at 165 lb.—13 tons at $35.00..	455.00
Laying same complete at $3. per foot.....	468.00
(This was the pipe that run out and into and under the river.)	
1—20″ upright valve	135.00
1—16 x 16 x 20 flanged T	40.00
2—16″ hand wheel valves at $75.00....	150.00
554 2—16″ flanged elbows at $17.50.....	35.00
2—wrought iron diaphragms in tunnel at $25.00	50.00
Main discharge:	
4—12″ flanged elbows at $12.00.....	48.00
2—12″ flanged hand wheel gates, at 40.....	80.00
1—12 x 12 x 14 flanged T.....	25.00
36 ft. 14″ cast iron pipe from pump to wall of engine house at 102 lbs. 3672 lbs. at $35. per ton	64.26
6—relief pipes and gate.....	25.00
2—anchor rods—anchor plates, collar and lattice columns supporting force main.....	100.00

Labor, lead, bolts, etc., and erecting above material	150.00	
Condensor discharge:		
132′ 8″ cast iron pipe laid at $1	132.00	
4—8″ elbows at $6.50	26.00	
1—8 x 8 T	9.00	
2—8″ valves at $22.00	44.00	
	2036.26	
Add 20%	407.25	
		$2,443.51
Grand total		$17,143.51

(D–) Boiler and appurtenances:

2 original boilers and appurtenances (replaced in 1895) each 54″ in diameter x 16′ long with 50 tubes 3½″ in diameter by 15′ long with grates, fronts, buck stays, bars, clean out doors, guages, safety valves, etc. Complete F. O. B. Knoxville	$1300.00	
Setting ditto, complete, including foundations	750.00	
Steam piping and connections	400.00	
Feed water connections	50.00	
Up take and dampers	35.00	
	$2535.00	
Add 20%	507.00	
		$3042.00
(*d*–2) 2 Additional boilers and appurtenances (set in 1889) and replaced in 1901 each 54″ in diameter by 16 ft. long with 70 tubes 3″ in diameter by 15 ft. long with grates, fronts, etc., complete F. O. B. Knoxville	1350.00	
Setting same complete, including foundations	750.00	
Steam piping and connections	300.00	
Feed water connections	50.00	
Up-take and dampers	35.00	
	2485.00	
Add 20%	497.00	
		$2982.00
		$23,167.51

555

3. Reservoir on Reservoir Hill, East Knoxville, comprising each two compartments, containing each 1,675,000 gallons.

I would like to state here that we have since emptied this reservoir, and had it measured and found each compartment contained about 1,800,000 gallons, making a total capacity up to
556 grade 247, 3,600,000 earth work embankment and partition with puddle bottom and sides, covered with concrete and brick paving laid in cement on edge slopes, soiled and seeded, brick paved walks laid in cement on embankment and partition all enclosed in wood fense 27,500
Add 20% 5,500

\$33,000

4. Distribution pipes and appurtenances, (exclusive of North Knoxville.)

A. Original construction to 1884:

Pipe at \$35.00 2000 pounds F. O. B. Knoxville 16" (at 127.5 pounds) 500 ft. laid complete exclusive of rock excavating at \$2.81.....	\$1405.00
14" (at 102#) 2578 ft. at \$2.25.....	5748.94
12" (at 82#) 2430 ft. at \$1.80.....	4374.00
10" (at 61#) 4496 ft. at \$1.37.....	6159.52
8" (at 41#) 7759 ft. at 98 cts.....	7603.82
6" (at 33#) 17,659 ft. at 79 cts.....	13950.61
4" (at 20#) 11,973 ft. at 51 cts.....	6106.23
Rock work 473.95 cu. yds. at \$1.75.....	829.41
	\$46,177.53
Replacing macadam on streets estimated distance 23,697 ft. at 6 cts. foot.....	1,421.82
Furnishing, setting and connection 80 fire hydrants at \$45.00 complete.....	3,600.00
Furnishing and setting pipe valves:	
3 16" valves at \$82.50 each.....	247.50
3 14" valves at \$68.00 each.....	204.00
3 12" valves at \$41.00 each.....	123.00
4 10" valves at \$32.25 each.....	129.00
557	
6 8" valves at \$21.75 each.....	130.50
17 6" valves at \$15.25 each.....	259.25
15 4" valves at \$10.50 each.....	157.50
Furnishing and setting 51 valves boxes ay \$2.50 each	127.50
	52,577.60
Add 20%	10,515.52
	\$63,093.12

B. Additional construction to Dec. 31st. 1891 (exclusive of North Knoxville.)

16″ cast iron pipe	110.5	ft. at	$2.81	.....	$810.50	
14″ "	141	"	2.23	.....	314.43	
12″ "	4054.3	"	1.80	.....	7297.74	
10″ "	572.5	"	1.37	.....	784.33	
8″ "	5450.7	"	98	.....	5341.69	
6″ "	21812.5	"	79	.....	17231.88	
4″ "	22060.9	"	51	.....	11251.06	
					42531.63	$42,531.63

Following is black, tarred and galvanized W. I. pipe:

3½″ pipe	292	ft. at	45 cts	.....	131.40
3″ "	360	"	39 "	.....	140.40
2″ "	29350	"	26 "	.....	7631.00
1½″ "	6770.7	"	22 "	.....	1489.55
1¼″ "	6841.9	"	19 "	.....	1299.96
1″ "	7836.6	"	15 "	.....	1175.49
¾″ "	8391.1	"	11 "	.....	923.02
½″ "	1891.7	"	10 "	.....	189.17
Rock work 1159.43 cu. yds. at $1.75				.....	2029.00
Replacing macadam on the streets 27,101 ft. at 6 cts				.....	1626.06
Furnishing, setting and connecting 61 fire hydrants at $45.00 each complete				.....	2745.00

558 Furnishing and setting pipe valves and stop cocks:

2 14″ valves at	$68.00	each		.....	$136.00
4 12″ "	41.00	"		.....	164.00
1 10″ "				.....	32.25
11 8″ "	21.75	"		.....	239.25
34 6″ "	15.25	"		.....	513.50
39 4″ "	10.50	"		.....	409.50
2 3″ "	6.50	"		.....	13.00
62 2″ "	3.00	"		.....	186.00
14½″ stop cock	2.40	"		.....	33.60
16 1¼″ "	1.75	"		.....	28.00
13 1″ "	1.20	"		.....	15.60
28 ¾″ "	.75	"		.....	21.00
5 ½″ "	.55	"		.....	2.75
Furnishing and setting 155 valve boxes at $2.50 each				.....	387.50
Furnishing and setting 76 stop cock boxes at $1.00 each				.....	76.00
					$64,174.63
Add 20%				.....	12,834.93
Total				.....	$77,009.56

Service pipes and appurtenances (assumed to have been laid originally without direct expense to the Company, but kept in repair and renewed from time to time by it thus involving maintenance and depreciation, but no interest charges).

Total number of services Dec. 31st. 1891 1800 at a cost value each complete of $8.00			$14,400.00
	Meters, meter boxes, and connections:		
559	42 ½" & ⅝" meters and connections at $10.50	$441.00	
	12 ¾" meters and connections at $15.75	189.00	
	7 1" meters and connections at $21.00	147.00	
	3 1½" meters and connections at $41.50	124.50	
	64 meter boxes and setting the same at $8.00	512.00	
		$1413.50	
	Add 20%	282.70	
	Total		$1696.20

7. Tools, teams, vehicles, office furniture and fixtures estimated at $2000.00.

8. Distribution pipes and appurtenances in North Knoxville, laid in 1891.

Pipe at $25.00 per 2000 lbs. f. o. b. Knoxville.

12" at 75 lbs. per ft. 1473.6 laid complete exclusive of rock excavation at $1.29		1900.94
10" at (56#)	3540 ft. at $1.02	3610.80
8" " (43#)	9261.3 " .79	7316.43
6" " (30#)	15185.6 at .58	8807.65
4" " (20#)	786.1 " .41	322.30
	Wrought iron pipe laid prior to 1891:	
3½" W. I. pipe	58.8 at 45 cts	26.46
3" " "	300 ft. .39	117.00
2½" " "	416.2 " .32	133.18
2" " "	2069.1 " .26	527.97
1½" " "	480.3 " .22	105.67
1¼" " "	697.2 " .19	132.47
	1" W. I. pipe 167.8 ft. .15	25.17
560	314 W. I. pipe 151.1 ft. at .11	$16.62
	Rock excavation 345 87/100 cu. yds. at $1.75	605.27
	Replacing macadam on streets, 15,123 ft. at .06	907.38
	Furnishing and setting 48 fire hydrants at $32.00 complete	1536.00

Furnishing and setting pipe valves and stop cocks:		
1 12″ valve		39.50
4 10″ valve- each $30.50		122.00
9 8″ valve- each $21.50		193.50
2 6″ valve- each $13.00		26.00
1 4″ valve		8.75
1 2½″ stop cock		4.00
6 2″ stop cock- at $30.00		18.00
1 1½″ stop cock at		2.40
3 1½″ stop cock- at $1.75		5.25
Furnishing and setting 46 valve boxes at $3.00		138.00
	$26,892.71	
Add 20%	5,378.54	
Total		$32,271.25

That disposes of all the plant that had been constructed up to the time of the purchase by Wheeler & Parks in December 1890, with the additions made during 1891.

II.

Additions Made During 15 *Months Ending M'ch* 31*st,* 1893.

1. Real estate. Nothing accounted.
2. Plant and improvements, at the river station. Nothing accounted.

561 3. Reservoir on reservoir hill. Nothing accounted.

4. Distribution pipes and appurtenances (exclusive of North Knoxville).

Pipe at $25.00 per 2000 lbs. f. o. b. Knoxville.

16″ pipe at (116#)	16 ft. at	$1.98		$31.68
12″ pipe at (75#)	6350.9 at	1.29		1892.66
10″ pipe at (58#)	1373.7 "	1.02		1401.17
8″ pipe at (43#)	472.4 "	.79		373.20
6″ pipe at (30#)	794.2 "	.58		460.64
4″ pipe at (20#)	85.9 "	.41		35.22
2″ W. I. pipe	164 "	.24		39.36
1″ " "	206.4 "	.14		28.90
¾″ " "	583.2 "	.10		58.32
Rock excavation $100.47 cu. yds. at $1.75				175.82
Replacing macadam on streets 4547 ft. at .06				272.32
Furnishing and setting 17 fire hydrants at $37.00 complete				629.00

Furnishing and setting pipe valves and stop cocks:

5 12″ valves at $39.50	197.50	
2 10″ " 30.50	61.00	
2 8″ valves at $21.50	43.00	
2 6″ " 13.00	26.00	
1 1″ stop cock	1.20	
Furnishing and setting 12 valve boxes at $3.00	36.00	
	$12,063.49	
Add 20%	2,412.70	
		$14,476.19

562 Q. We now come to a credit or a deduction from the estimated construction cost to the extent of the value for further use of old pipes and appurtenances taken up as follows:—

Less net credits for pipe etc. taken up. Old cast iron pipe accounted at price of new pipe less cost of taking up as follows:—

For taking up	16″	cast iron pipe	30 ct. per ft.
"	12″	"	22 "
"	10″	"	18 "
"	8″	"	15 "
"	6″	"	12 "
"	4″	"	10 "
"	3″	"	10 "

Wrought iron pipe for taking up the cost, offset, its value taken up as follows:—

12″ pipe 208 ft. valued at .71	$147.68	
6″ pipe 16.6 ft. " .24	4.15	
4″ " 669.9 ft. " .15	100.49	
2″ W. I. 1874 ft. nothing.		
1″ W. I. 320 ft. "		
5 fire hydrants at $27.00	135.00	
1 12″ valve	35.50	
2 valve boxes, at 2.50	5.00	
Total net credits		$430.32

Which deducted from the above total of $14,476.19 leaves as the net amount for distribution pipes laid during 15 months ending March 31st. 1893, $14,045.87.

5. Service pipes and appurtenances.

(Paid without direct cost to the Company, but kept in repair and renewal by it, subject to maintenance and depreciation
563 charges but not to interest.)

Number of services added to M'ch 31, 1893:

130 at a cost value each of $8.00.....	$1040.00	
Meters, meter boxes, and connections:		
5 ½" & ⅝" meters and connections at $10.50	52.50	
1 ¾" meter and connection.....	15.75	
1 1" meter and connections.....	21.00	
1 1½" meter and connection.....	41.50	
2 2" meters and connections at $62.00....	124.00	
10 meter boxes and setting the same at $8..	80.00	
	$334.75	
Add 20%	66.95	
Total		$401.70

7. Tools, teams, vehicles, office furniture fixtures, etc. additional 15 months on March 31st, 1893:

Horse, wagon, harness, etc. about.....	300.00	
Safe	450.00	
Office furniture and fittings.....	125.00	
Sundry tools, etc.	225.00	
	31,000.00	

No percentages.

8. Distribution pipes and appurtenances in North Knoxville Pipe at $25.00 per 2000 lbs.:

6" at (30#) 234.8 ft. at .58.....	136.18	
4" at (20#) 198 ft. at .41.....	79.13	
2" W. I. 229.9 " .24.....	55.18	
Rock excavated 6–58/100 cu. yds. at 1.75..	11.52	
Replacing macadam 214 ft. at .06.....	12.84	
Furnishing and setting 1 4" gate...	8.75	
564 Furnishing and setting 1 6" gate...	13.00	
" " 1 2" gate...	3.00	
" " 3 valve boxes at 3.....	9.00	
	328.60	
Add 20%	65.72	
	$394.32	
Net amount distribution pipes laid in North Knoxville during fifteen months ending March 31st, 1893.....		$394.32

"III."

Additions Made During Year Ending M'ch 31, 1894.

(The Lonsdale Beaumont Works originally completed during this time, are accounted for, and scheduled separately down to the time when they were acquired by the Knoxville Water Company in 1900.)

1. Real estate. (Nothing accounted.)
2. Plant and Improvements at River Station. "
3. Reservoir on reservoir hill. "
4. Distribution pipes and appurtenances (exclusive of North Knoxville).

Pipe at $25.00 per 2000# f. o. b. Knoxville.

18" (at 140#)	60.5 at $2.40	$145.20	
16"	354.3 ft. at $1.98	701.51	
10"	1205 " " 1.02	1229.10	
8"	1168.6 " .79	923.19	
6"	3938.8 " .58	2284.50	
4"	381.7 " .41	156.50	
3" (at 15#)	1045.5 " .33	345.02	
2" W. I.	393.3 " .24	94.39	
Rock excavation 85.48 cu. yds. at $1.75		149.59	
Replacing macadam 4077 ft. at 6 cts.		244.62	
Furnishing and setting 1 fire hydrant		37.00	
565		6310.62	
Furnishing and setting pipe valves and stop cocks:			
1 18" valve		102.00	
1 16" "		70.00	
1 12" "		39.50	
2 10" " at $30.50		61.00	
5 8" " 21.50		107.50	
24 6" " 13.00		312.00	
2 4" " 8.75		17.50	
13 3" " 6.50		84.50	
1 2" stop cock		3.00	
Furnishing and setting valve boxes, 50 at $3.00		150.00	
		7257.62	
Add 20%		1451.52	
			$8709.14

Less net credits for pipe, etc. taken up, (old pipe accounted as stated under II).

Taken up:

6" 362.1 at .25		90.52	
4" 543.2 .15		81.48	
3" W. I. 20.3 ft. at (No value.)			
2" " 1543.4 " "			
1½" 1624.5 " "			
1¼" 75.7 " "			
1" 443.9 " "			
3¼" 183.9 " "			
		$172.00	
566		172.00	$8709.14
½" W. I. 116.0 ft. at (No value).			
1 fire hydrant		27.00	
Valves, 1–6"		11.50	
6–4" at $8.00		48.00	
1–3" 6.00		6.00	
5–2" 2.50		12.50	
2 1½" 2.00		4.00	
1 1¼"		1.40	
1 1"		1.00	
3 ¾" at 60 cts		1.80	
20 valve boxes at $2.50		50.00	
Total net credits			325.20
Net amount distribution pipes laid 1 year to Mch. 31st. 1894			8373.94

5. Service pipes and appurtenances (laid without direct cost to the Company, but kept in repair and renewal by it).
(Not including "blind" services laid in advance of paving.)

160 additional services at $8.00	$1280.00	

6. Meters, boxes, and connections:

6 ½" and ⅝" meters and connections at $10.50	63.00	
2 ¾" meters and connections at $15.75	31.50	
1 1" meter and connections	21.00	
1 4" " " "	225.00	
10 boxes and setting same at $8	80.00	
	$420.50	
Add 20%	84.10	
		$504.60
Credit:		
1 2# meter and connection removed		62.00
		$442.60

567 7. Tools, teams, vehicles, office furniture, tapping machine, etc. $625.00

(No percentage charged.)

8. Distribution pipes and appurtenances in North Knoxville.

(Pipe at $25.00 per ton f. o. b. Knoxville.)

10″ 375.0 ft. at $1.02	$382.50	
6″ 761.5 ft. at .58	441.67	
2″ (W. I. 349.0 ft. at .24	83.76	
Rock excavation on 1,485.5 ft. at .01 cu. yds. 14.86 cu. yds. at 1.75	26.01	
Replacing macadam 568 ft. at .06	34.08	
Furnishing and setting 2–10″ valves at 30.50	61.00	
1 6″ valve	13.00	
1 2″ valve	3.00	
4 valve boxes, at $3.00	12.00	
		$1057.02
Add 20%		211.40
		$1268.42

Less credits for pipe, etc. taken up:

2″ 319.2 ft. at No value.		
1″ 167.8 ft. at "		
¾″ 39.0 ft. at —.		
1 2″ stop cock	2.50	
1 valve box	2.50	
		5.00
Net amount distribution pipes laid in North Knoxville 1 year to Mch. 1st. 1894		1,263.42

568 9. High service pumping station and Filter plant.

A. Buildings, comprising engine, boiler, coal and filter house chimney stack and settling basins.

(a) Excavations and foundations:

11s6 cu. ft. excavation and regrading at 30c. cubic yd.	240.80
40,000 brick in hydraulic cement in foundations to Gr. 243 at $15. per M.	600.00
51,000 vitrified brick in Portland cement (around settling basin,) to Gr. 243 at $25.	1275.00
17 cu. yds. hydraulic cement concrete in chimney foundation at 4.25	72.25
Total	2282.05
Add 20%	457.61
	$2745.66

B. Pumping machinery and appurtenances.
(*a*) Pumping engine.
(*b*) Foundations for do.
(*c*) Suction and discharge pipe and connections.
(*d*) 1 Manning and Upright boiler:

44″ diameter with 88 cubes 2½″ diameter by 13 ft. long f. o. b. Knoxville.....	720.00	
Hauling, foundations and setting up, complete	80.00	
Uptake and damper	40.00	
		$840.00
Add 20%		168.00
		$1008.00

569 10. Standpipe on Reservoir hill. Steel tank 32″ diameter x 85′ high, on concrete and brick foundation.

A. Foundation:

Excavation and grading 80 cu. yds. at .30..	$24.00	
Concrete 90 cu. yds. at $4.25.....	382.50	
Common brick work laid in cement, complete 11,200 at $15.00 per M.....	168.00	
Vitrified brick facing laid in cement complete 1700 at 22.50.....	38.25	
Cement grout 6.32 cu. yds. complete at $13.00	82.16	
160 cast iron special flanged quarter bend with footing piece and flanged connecting piece	60.00	
		$754.91

B. Tank and appurtenances:

Weight of metal, including ladder valcony, etc. complete computed gross metal work about 215,000 lbs. say 210,000 lbs. plates at 5 cts. per lb. completed.....	10,500.00
	$11,254.91
Add 20%	2,250.98
	$13,505.89

570 IV.

Additions During Year Ending Mar. 31, 1895 (*Including North Knoxville Works, Purchased Nov.* 17, 1898, *and Excluding Lonsdale Beaumont Works*).

1. Real estate (Nothing accounted.)
2. Plant and improvements at River Station.

A. New engine house and vertical engine pit and screen well.

(*a*) Below basement floor (about Gr. 43.00.)

Earth excavation and regrading 1869 cu. yds. at 30....		$410.70
Rock excavation, 308 cu. yds. at 1.875.....		577.50
Portland cement concrete in foundations and walls 677 cu. yds. at 6.50.....		4,400.50
Common brick in walls of engine pit outside walls and screen wall, laid in Portland Cement mortar 85,000 at $18		1,530.00
Vitrified brick in facing of engine pit, outside walls and screen wall and in tunnel and dispraghm laid in Portland Cement 36,000 at $25.00.....		900.00
Iron doors over screen wall I beams etc.....		40.00
Screens and screenways, complete.....		100.00
Drainage pipes, gates, etc. including 1–6″ gate 24′ of 6″ pipe 84′ of 8″ pipe fittings etc. complete.....		125.00
		$8,083.70
Add 20%		1,616.74
		$9,700.44

571 A. New 24 in. cast iron intake conduit:

Earth excavation 78 cu. yds. at 50c.....	$39.00	
Rock excavation 101 cu. yds. at $3.....	303.00	
Steam and hand pumping.....	150.00	
Coffer dam about 15 M ft. lumber B. M. and carpentry complete at $30.....	450.00	
Sand bags and labor on construction exclusive of laying conduit.....	450.00	
24″ cast iron pipe laid complere with machined flange in screen chamber 105 ft. at 3.75	393.75	
1 24″ quarter bend.....	50.00	
Setting same	60.00	
1 24″ sluice gate woth fittings and settings ditto, complete	250.00	
1 24″ flange and bell pipe machined set for additional intake connection.....	40.00	
	2,185.75	
Add 20%	427.15	
		$2,622.90

3. Reservoir on Reservoir hill. Nothing accounted.
4. Distribution pipes and appurtenances, including North Knoxville.

(Pipe accounted at $20. per 2000 lbs. f. o. b. Knoxville.)

20″ (at 165#)	2,647.8 ft. at 2.40.....		6,354.72
18″ (at 140#)	654.4 ft. at 2.03.....		1,328.43
16″	5,002.9 " 1.67.....		8,254.84
572			
14″	4,883.8 ft. at $1.37.....		6,690.81
12″	4,484.2 " 1.10.....		4,932.62
10″	2,523.8 " .87.....		2,195.72
8″	904.5 " .68.....		615.06
6″	5,045.8 " .50.....		2,522.90
4″	259.0 " .36.....		93.24
3″	1,298.4 " .29.....		376.54
2″ (W. I.)	56.0 " .24.....		13.44
1¼″ (W. I.)	53.0 " .17.....		9.01
1″ (W. I.)	16.5 " .14.....		2.21
Rockwork on 27,830.1 ft. at .01 cu. yds. 278.2 cu. yds. at $1.75.....			487.03
Replacing macadam 13,853 ft. at .06.....			831.18
Furnishing settings and connecting 5 fire hydrabrs complete at $37.00.....			333.00
Furnishing and setting pipe valves and stop cocks:			
7 20″ valves at $130.....			910.00
11 16″ " 70.....			770.00
8 14″ " 58.....			464.00
8 12″ " 89.50.....			316.00
3 10″ " 30.50.....			91.50
			$37,692.34
5 8″ " 21.50.....			107.50
22 6″ " 13.00.....			286.00
6 4″ " 8.75.....			52.50
8 3″ " 6.50.....			59.00
573			
1 16″ check valve $185.00.....			185.00
Brick chamber and cover for same.....			20.00
78 valve boxes, set at $3.00.....			234.00
			$38,629.34
Add 20%			7,725.87
			$46,355.21

Less net credits for pipe etc. taken up (old pipe accounted as stated under II).

Taken up:

8″ 24.0 ft. at .25	6.00	
6″ 2301.9 ft. at .16	368.30	
4″ 1171.1 ft. at .09	105.40	
2″ 3497 ft. (No value).		
1½″ 428.8 ft. at —.		
1¼″ 824.1 ft. at —.		
1″ 162.0 ft.		
¾″ 559.0 ft.		
9 fire hydrants at $27.00	243.00	
Pipe valves and stop cocks:		
6″ 4 at 11.50	46.00	
4″ 2 at 8.00	16.00	
2″ 6 at 2.50	15.00	
1″ 1 at 1.00	1.00	
14 valve boxes at 2.50	35.00	
1½″ 1 at 2.00	2.00	
		887.70

Net amount distribution pipes etc. laid year ending Mar. 31st, 1895 ..... $45,517.51

574 5. Service pipes and appurtenances (laid without direct cost to the Company but kept in repairs and renewed by it).

About 130 additional services at $8	$1,040.00	
8. Meters, boxes, and connections:		
5 1″ meters and connections at 21.00	105.00	
2 1½″ meters and connections at 41.50	82.00	
2 2″ meters and connections at $62	124.00	
9 meter boxes and setting same at $8	72.00	
	$384.00	
Add 20%	76.80	
		$460.80
Credit:		
2 ½″ and ⅝″ meters and connections removed at $10.50	21.00	439.80
7. Tools, teams, vehicles office furniture, etc.	350.00	350.00

(No percentage charged.)

8. North Knoxville merged into general distribution.

9. High service pumping station and filter plant.

A. Buildings, comprising engine, boiler, coal and filter house, chimney stack and settling basin.

(*a*) Excavation and foundations nothing accounted.

(*b*) Above ground line, or grade 243.

62 M	Common brick laid in lime mortar at $13	$806.00	
575	90 M vitrified brick at $20	$1,800.00	
	46 M Vitrified brick in Portland Cement (settling basin) at $25	1,150.00	
			$3,756.00
35 M	Brick in chimney stack at 20		660.00
16 M	Vitrified brick " " at 27.50		412.50
8¼ M	trimming brick laid in building and chimney at $40		130.00
	Lead cap on chimney 400 lbs. at .07	24.00	
	Soldering and placing same	10.00	
			34.00
23	marble window sills set at 4. 112.00	112.00	
2	Marble door sills set at 7.50	15.00	
2	marble door sills set at 5	10.00	
2	marble pediments at front entrance set at $5	10.00	
			147.00
6	windows and frames (12′ x 16′ 24 lights) at $10.00	60.00	
15	windows and frames (12′ x 16′ 16 lights) at 8	120.00	
2	windows and frames (12′ x 16″ 10 lights) at 8	12.00	
1	window and frame (12′ x 16″ 8 lights) at 5	5.00	
4	windows and frames (12′ x 16″ 4 lights) at 3	12.00	
576	2 doors and frames 3′ x 4′ hammered glass panels at $8	16.00	
1	outside door and frame 5′ 7″ x 8′ 0″ with plate glass panels	20.00	
1	outside door and frame 5′ 4″ x 8′ 8″ with 3 ft. transoms	12.00	
		$257.00	$5189.50
2	inside doors and frames, 5′ 9″ x 7′ 6″ at $8.00	18.00	
1	door 8′ 4½″ x 4′ covered with galv. iron.	6.50	
1	batton door in roof of boiler room	3.00	
2	batton door- in basement at 4	8.00	
1	hanging door between boiler room and coal shed	5.00	
	Hardware in doors and windows	95.00	
	Carpenter work and painting	78.00	
			$468.50
	Flooring and stairways:		
346	sq. ft. concrete flooring in coal shed at 16⅔c. laid	58.00	

530 sq. ft. do. in boiler room at 16⅔ cts....	88.33	
655 sq. ft. do. in basement pump room at 16⅔ cts.	109.17	
1200′ B. M. *in* joists pump room floor at $16.00	19.20	
577 1400′ B. M. in under floor do. at 16.	22.40	
100′ B. M. in upper floor do. 1¼″ B. M. Matched at $26.....	28.60	
Stairway boiler house to pump room say..	50.00	
Stairway to and front entrance of filter house incl. stairs to basement etc. estimated at..	100.00	
Carpenter work and painting.....	70.00	
		$545.70
		$6,153.70
Roofing, incl. ventilator top, flag pole, etc.:		
13 trusses 8000′ B. M. timber ar $26.00 delivered	208.00	
Purlines 4800′ B. M. timber at $26 delivered	124.80	
Wall plates 1200′ B. M. timber at $26.....	31.20	
Rafters, ridge plates etc. 7200′ B. M. timber at $28.00	187.20	
Ventilator tops 700 ft. B. M. Timber at 26.	18.20	
17,500 ft. B. M. roofing boards at 26.....	455.00	
Slating 114 sqs. at $7.50.....	855.00	
Flashing, gutters and conductors, all copper	250.00	
Carpenter work, incl. mouldings and trimmings $700	700.00	
Painting, oiling, etc.	350.00	
Hardware, nails, irons for trusses etc. estimated	175.00	
		3,354.40
578 Heating apparatus, fire protection pipes, and fittings, plumbing, tool and clothes cabinet, etc. etc.		$450.00
Drainage and concrete bottom to settling basin, incl. deflecting walls, mud stops, and channels:		
Valves, pipes, etc.....	73.00	
302′ drainage channel incl. plank covers, weights, etc. at .75 per ft.....	226.50	
Portland cement concrete floor 6″ thick 182 sq. yds. at $2.....	364.00	
12 M brick in cement in division walls influent chamber, mud stop etc. at 15....	180.00	
		843.50
		$10,801.60
Add 20%		2,160.32
		$12,961.92

B. Pumping machinery and appurtenances.

(*a*) Pumping engine:

1	compound condensing, direct duplex, steam pumping engine 9″ and 18½″ steam cylinders, 14″ water plungers x 18″ stroke, with 1 surface condensor in line of suction pipe, 1 air or vacuum pump 4½″ steam and 6″ pump cylinder x 6″ stroke, erected exclusive of foundation...	3000.00	

(*b*) Foundation for above:

	Hydraulic cement concrete footings, 22.7 cu. yds. at 4.50.....	102.15	
579	Brick laid in Portland cement 9 M at 18 per M.....	162.00	
	Foundation stones, set complete.....	60.00	
			324.15

(*c*) Suction and discharge pipes and connections:

	2 special 12″ long curved flanged pipes.		
	2 special 12″ short do.		
	1 special 12″ reversed do.		
	1 special 12″ straight flanged pipe.		
	2 12″ flanged valve.		
	1 12″ gate stand.		
	Erected complete	300.00	300.00
			$3,624.15
	Add 20%		724.83
			4,348.98

(*d*–1) Manning upright boiler and connections:

	Steam piping and connections.....	100.00	
	Feed pump, hot well and connections.....	200.00	
		300.00	
	Add 20%	60.00	
			360.00

C. Filtration plant:

	(*a*) Original installation, comprising 14 gravity filters of the Warren type each 10′ 6″ diam. with connecting piping, valves, alum *congulation*, apparatus, clear water weigh tank with Westinghouse vertical engine and shafting, pulleys, hangers and belting operating fl*o*r and with provision for future addition of 4 more filters. (Not including settling basins, which are		
580	included under "A" (*a*) hereof).....		23,300.00

(*b*) Foundation floor and drainage channels under filters:

Portland cement granolithic or concrete floor 415 sq. yds. at $1.50.....	622.50	
Brick in opening drainage channels and sides of pit for clear water tank, laid in Portland cement 4500 brick at 25 per M..	112.50	
Sump well and grating.....	10.00	
		745.00

(*c*) Pipe sewers, catch basins, and manholes within company's premises and *to* manhole in Payne street:

8″ sewers 250 lin. ft. at 75. per ft.....	187.50	
6″ sewers and connections 87 lin. ft. at .60.	52.20	
2 manholes and covers complete at 35.....	70.00	
7 catch basins and covers complete $10.....	70.00	
		379.70
		$24,424.70

(*d*) Pipe sewer and manholes in Payne street:

8″ sewer 580 lin. ft. at .90.....	522.00	
2 manholes and covers complete at $35.00..	70.00	
1 lamp hole and cover.....	5.00	
		597.00
(*e*) Bridging and flooring over settling basin for alum apparatus and storage....	125.00	

581 (*f*) Foundation for Westinghouse engine:

2750 brick in Portland cement at $18.....	49.50	
Sole plate	20.00	
		79.50
		25,226.20
Add 20%		5,045.36
		$30,271.56

10. Stand pipe on Reservoir hill.
(Nothing accounted.)

The further taking of depositions was adjourned until Tuesday morning Nov. 11th. 1902.

582 TUESDAY MORNING, *November 11th*, 1902—9.30 a. m.

Continuation of Direct Examination of WM. WHEELER:

V.—*Additions During Year Ending March* 31, 1896.

(Including North Knoxville Works and Excluding Lonsdale-Beaumont Works.)

1. Real Estate. Nothing accounted.
2. Plant and improvements at River Station.

A. New engine house and vertical engine pit and screen well (as now existing).

(*a*) Below basement floor, about Gr. 43.00.

Brick retaining walls to Gr. 43.

35 M common bricks laid in cement at $15.00		$525.00
(*b*) Above basement floor, or Gr. 43:		
31 M common brick, laid in cement in retaining walls, at $15.00	$465.00	
Common brick in walls of engine house and basement, to Gr. laid in Portland cement mortar, 32 M at 18	576.00	
Vitrified brick in outside wall, laid in Portland cement mortar, 6 M at 25	150.00	
Portland cement concrete between inner and outer walls of building, 35 cu. yds. at 6.50	344.50	
Common brick in cement in walls of office, workshop and separating wall of old pump pit, between Gr. 43 and 53, 32 M brick, laid at 15	480.00	
105 sq. yds. Portland cement flooring in basement of engine house at $1.50	157.50	
Forward	$2,173.00	$525.00

583

27 M Common brick in lime mortar in walls of engine room office and shop above Gr. 53 at $13.00	$351.00	
10,500 vitrified brick in lime mortar in walls of engine room, office and shop above Gr. 53 at 20	210.00	
13 window sills set at 4	52.00	
3 door sills set at 7.50	22.50	
5 windows and frames (15″ x 12 lts.) at 9	45.00	
3 do. (16″ x 18″—8 lts.) at 7	35.00	
2 do. (18″ x 24″ 4 lts.) at 6.50	13.00	
2 do. (24″ x 24″—2 lts.) at 6	12.00	
1 do. (16″ x 18″ 2 lts.)	5.00	
2 doors and frames 4′ 0″ x 7′ 6″ at 7.50	15.00	
1 do. 3″ 0″ x 7′ 0″	7.00	
1 do. 6′ 6″ x 8′ 0″, with plate glass panels	22.00	

5 basement windows, frames and fastenings at 4	20.00		
Hardware in doors and windows	35.00		
Carpenter work and painting	50.00		
		333.50	
Flooring and stairway:			
3300 ft. B. M. timber of office, workshop and pump room, also 2nd floor office and workshop, at $28. delivered	84.00		
4700′ B. M. in upper and under floors of same at 28. delv.	131.60		
	$215.00	$3067.50	$525.00
584			
Stairway, pump room to basement, say	$15.00		
Carpenter work and hardware, say	140.00		
		370.00	
Roofing, incl. ventilator top, cupola, etc.:			
4300′ B. M. timber in roof at 28	120.40		
3200′ B. M. 1¼″ matched roofing at 28	89.60		
Slating, 28 sqs. at 7.50	210.00		
Flashing, gutters and conductors	60.00		
Carpenter work, incl. mouldings and trimmings	130.00		
Painting, sil-ing, etc	65.00		
Hardware, nails, ironwork for trusses, etc.	30.00		
		705.00	
42 sq. yards Portland cement concrete around pump house at $1.50		63.00	
Railing around retaining walls and balcony 222 ft. at 40 cts		88.80	
			4294.90
(c) Rebuilding old pump house:			
16,000 brick laid in lime mortar at 13		208.00	
Taking down walls, removing old roof, etc., say		40.00	
Repairs to trusses new tie rods, etc		30.00	
2000′ B. M. lumber, timber, etc. in purline, cupola, etc., at $28		56.00	
1850′ B. M. 1¼″ matched roofing boards at 28		51.80	
Slating, 15 sqs. at 7.50		112.50	
Flashings, gutters, etc		20.00	
Carpenter work, mouldings, trimmings		75.00	
Painting, oiling, etc		60.00	
Hardware, nails, and iron work		40.00	
			693.30

585 (*d*) Heating and drainage:

Radiators and other heating apparatus	$25.00	
185′ 4″ C. I. solid pipe laid at 40 cts	74.00	
Rock excavation 10 yds. at 1.75	17.50	
Water closet and wash stand, incl. carpenter work and painting complete	125.00	
		241.50

(*c*) Stairway and grading west of building:

Stairway from near Craig Street to pumping station 250 ft. at 40 cts. per running foot	100.00	
Grading estimated at	125.00	
		225.00
		$5979.70
Add 20 %		1195.94
		7175.64

B. Boiler House. Rebuilt complete with brick walls and slated roof.

(*a*) Below ground line, about Gr. 52:

Earth excavation and regrading 100 cu. yds. at 30 cts	30.00	
Rock excavation 300 cu. yds. at 1.875	502.50	
22000 brick laid in cement at $15. per M	330.00	
		922.50

(*b*) Above grade 52:

32000 bricks laid in lime mortar at 13	416.00	
7 window sills set at 4	28.00	
3 door sills set at 7.50	22.50	
4 windows and frames (12′ x 18″ 6 lts.) at 8	32.00	
2 do. (21″ x 18″ 2 lts.) at 7	14.00	
1 do. (18″ x 24″ 4 lts.)	8.00	
1 door and frame, 5′ x 8′	10.00	
1 do. 5′ x 6′ x 8′	10.00	
586 1 do. 5′ 6″ x 8′	10.00	
1 do. 9′ 0″ x 9′ 0″	16.00	
Carpenter work and painting, say	30.00	
Hardware in doors and windows	25.00	
Floor 86.5 sq. yds. Portland cement concrete at $1.50	129.75	

Roofing:

2200′ B. M. in rafters, purlins, etc. at 28	61.60
28′ B. M. 1¼″ matched roofing at 28	78.40
Iron supporters for purlins, rods and other roof hardware	80.00
Carpenter work, incl. mouldings, trimmings, etc.	95.00

Painting and oiling	40.00	
Slating, 25 squares at 7.50	187.50	
Flashing, gutters, conductors, etc	50.00	
		1333.75
		2256.25
Add 20 %		451.25
		$2707.50

C. Tool and storage house:

Moved from the west to east side of engine and boiler house, including new foundations, estimated. (No percentage added)	25.00	

D. Chimney stack and inclined flue:

Moving and refitting inclined flue and connections to conform to new boilers and boiler house. (No percentage added)	225.00	

E. Coal chute, with new coal shed and pocket.

(*b*) Coal shed and pocket:

24000 brick for foundations, laid in cement at 15.	360.00	
7800 ft. lumber at 16	124.80	
587 Slating, 9 sqs. at 6	54.00	
Carpenter work	75.00	
Hardware, bolts, etc	35.00	
Brick paved floor bricks on edge in cement 90 sq. yds. at 1.20	26.00	
		774.80

Coal chute:

3000′ B. M. lumber at $16.00	57.60	
Carpenter work, hardware and painting, say	80.00	
7900 lbs. iron plates in bottom at 40c. in place	316.00	
Corrugated iron on roof, 8 sqs. at 3, placed	24.00	
Upper end of chute, extra labor and material	20.00	
		497.60
		1,242.40
Add 20 %		248.48
		$1,490.88

F. Store House and Fencing on Craig Street. (Nothing accounted.)

G. Pumping machinery and appurtenances.

(*d*–5) 2 additional *l* boilers and appurtenances, (replacing original ones set in 1882–83) each 54″ diameter x 16′ long, with 62 tunes 3″ diam. x 15′ long fitted with Hawley Down Draft furnaces and with fronts, grates, etc.

Boilers and fittings complete f. o. b. Knoxville, without Hawley attachments	1,150.00	
Hawley down draft Furnaces	1,200.00	
Setting same complete incl. foundations	700.00	
588 Changing position of and resetting two boilers originally set in 1889 incl. foundations complete and using old material as far as possible	500.00	
Steam piping and connections, say	250.00	
Feed water piping and connections, incl. filtered water supply	150.00	
Uptake and Dampers	40.00	
	3,990.00	
Add 20%	798.00	
		$4788.00

(*e*) 1 Deane vertical, direct acting, compound, condensing, duplex steam pumping engine, having 16¼″ and 30¼″ steam cylinders, 18½″ and 26″ differential plungers, x 24″ stroke:

1 Surface condenser, 330 sq. ft. surface. 1 Deane vacuum pump, having 6″ steam, and 9″ vacuum cylinders, with 10″ stroke; 1 Automatic receiver and duplex feed pump and sundry appurtenances	13,175.00	
Add 20%	2,635.00	
		15,810.

(*f*) Foundations for Deane vertical pumping machinery:

Water end, 3,200 brick in Portland Cement at 18..	57.60	
3 foundation stones, set	50.00	
Steam end, 6,000 vitrified brick laid in Portland cement at 25	150.00	
3 Foundation stones, set	37.50	
	295.10	
Add 20%	59.02	
		354.12

(*g*) Suction and discharge pipe:

2 stuffing boxes through diaphragm at $75	150.00
589 2 Suction pipes from inside of stuffing boxes to near bottom screen well, about 10,000 — complete	425.00
Bolts and I beams to hold same in place	13.00
Disconnecting and reconnecting old suction and condenser pipe, sundry pipes, valves and fittings.	220.00

Discharge pipes, valves, checks, and fittings, from gate on pump to North wall pump house exclusive of pipe, grates, hydrants in distribution system	560.00	
	1,373.00	
Add 20%	294.60	
		1,647.60

3. Reservoir. Nothing accounted.

4. Distribution Pipes and appurtenances.

(Pipe accounted for at $20 per 2000 lbs. f. o. b. Knoxville, except 3″ which is $26.00.)

20″ 47 ft. at 2.40	112.80	
10″ 264.5 ft. at .87	230.12	
8″ 407.2 ft. at .68	276.90	
6″ 2,391.3 ft. at .50	1,195.65	
4″ 912.4 ft. at .36	328.46	
3″ 3,291.3 ft. at .34	1,119.04	
Rock work on 7,313.7 ft. at 01 cu. yds.:		
73.14 cu. yds. at $1.75	128.00	
Replacing macadam, etc., 3,657 ft. at .06	219.42	
Furnishing, setting and connecting 3 fire hydrants complete at $37	110.00	
Furnishing and setting pipe valves, stop-cocks:		
1 10″ valve	30.50	
2 8″ valves at 21.50	43.00	
590 10 6″ valve- at 13.00	130.00	
3 4″ valve- at 8.75	26.24	
13 3″ valve- at 6.50	84.50	
1 2″ stop cock	3.00	
2 1″ " " 1.20	2.40	
1 3/4″ " "	.75	
33 Valve boxes at 3.	99.00	
	4140.79	
Add 20%	828.16	
		4,968.95

Less net credits for pipe taken out (old pipe accounted for as stated under II):

4″ 308.3 ft. at 9 cts.	27.75	

3½″ W. I. 100 ft. (No value.)
3″ " 48 " "
2″ " 565.3 ft. "
1½″ " 61 ft. "
1¼″ " 253.4 ft. "

1″ W. I. 893 ft. (No value.)
¾″ " 880.1 ft. "
½″ " 288 ft. "

1 fire hydrant	27.00	
Pipe valves and stop cocks:		
4″ 2 at 8.00	16.00	
2″ 2 " 2.50	5.00	
1¼″ 1 at 1.50	1.50	
1″ 2 at 1.00	2.00	
¾″ 5 at .50	2.50	
½″ 1 at 0.40	.40	
13 valve boxes at 2.50	32.50	
Net amount distribution pipes etc. laid during year ending M'ch 31 1896		114.65
		$4854.30
591 5. Service pipes and appurtenances:		
About 250 additional services at 8.	2000.00	
Credit by receipts at rate of $5. each	1250.00	
Fair net cost of services		$750.00
Add 20%		150.00
		900.00
6. Meters, boxes, and connections:		
11 ½″ or ⅝″ meters and connections at 10.50	115.50	
5 ¾″ do. ay 15.75	78.75	
11 ½″ do	41.50	
17 meter boxes and setting same at 8.	136.00	
	371.75	
Add 20%	74.35	
		446.10
Credit:		
2 1″ meters and connections removed at $21		42.00
		$404.10
7. Tools, Teams, Vehicles, Office furniture, etc., about		50.00
8. North Knoxville. Merged into General distribution,		
9. High service Pumping station and Filter plant,		
A. Buildings, etc.:		
Fire protection pipes, hose, etc.	70.00	
Lighting fixtures, say	40.00	
	110.00	
Add 20%	22.00	
		132.00

B. Pumping machinery and appurtenances, Nothing accounted

592 C. Filtration plant. Nothing accounted

B. Grading and fencing:

2000 cu. yds. earth removed in grading at 20 cts..	400.00	
80 cu. yds. macadam on drives, etc. at 1.15.....	92.00	
900 sq. yds. sodding at 10 cts.....	90.00	
Grass seeds etc. say.....	10.00	
800 lin. ft. fencing at 35 cts.....	280.00	
	$872.00	
Add 20 %.....	174.40	
		1046.40

VI.—*Additions During Year Ending M'ch 31st, 1897.*

(Including North Knoxville Works, and Excluding L. B. Works.)

1. Real estate, nothing accounted

2. Plant and improvements at river station:

G. (*h*) Pulsometer pump for screen wall.....	175.00	
Piping, setting and hanging same.....	40.00	
	$215.00	
Add 20 %.....	43.00	
		$258.00

3. Reservoir. Nothing accounted.

4. Distribution Pipes and appurtenances.

(Pipe accounted for at $20. per 2000 lbs. f. o. b. Knoxville, except 3″ which is $26.00.)

8″ 65 ft. at 68 cts.....	57.60
6″ 3,582.3 ft. at 50 cts.....	1,791.15
4″ 179.8 ft. at 36 cts.....	64.75
3″ 1,255.3 ft. at 34 cts.....	426.80
2″ 386.1 ft. at 24 cts.....	92.66
1½″ 599.5 ft. at 20 cts.....	11.90
593 3/5″ 277.5 ft. at 10 cts.....	27.75

Rock work on 6,325.5 ft. at .01 cu. yds:

63.25 cu. yds. at 1.75.....	110.60
Replacing macadam 2551 ft. at 6 cts.....	153.06
Furnishing, setting and connecting 9 fire hydrants complete at $37.00.....	333.00

Furnishing and setting pipe valves and stop cocks:

1 8″ valve.....	21.50
8 6″ valves at 13.00.....	104.00
4 3″ valves at 6.50.....	26.00

1 2″ stop cock	3.00	
Furnishing and setting 14 valve boxes at $3	42.00	
	$3,366.04	
Add 20%	673.21	
		$4,039.25

Less net credits for pipe, etc. taken up; (old pipe accounted for as stated under II.)

Taken up:

1 ½″ 30′ at No value
1 ¼″ 610.5 "
¾″ 400.0′ at "

Valves 1 1½″ at 2	4.00	
2 ¾″ at .60	1.20	
3 valve boxes at 2.50	7.50	
Total net credits		12.70
Net amount distribution pipes laid one year to March 31st. 1897		4026.55

5. Service pipes and appurtenances:

200 additional services laid at $8	1600.00	
Less amount received at $5.00 ec	1000.00	
Fair net cost	600.00	
594 F'w'd	$600.00	
Add 20 %	120.00	
		$720.00

6. Meters, boxes, and connections:

12 ½″ and ⅝″ meters and connections at 10.50	126.00	
5 ¾″ do. at $15.75	78.75	
17 boxes and setting same at 8	136.00	
	$340.75	
Add 20 %	68.15	
		408.90
1 1″ meter and connection removed		21.00
		$387.90

7. Tools, Teams, Vehicles, Office Furniture, etc. estimated at 50.00

No percentage charged.

8. North Knoxville distribution merged into Knoxville.

9. High service pumping station and filter plant:

B. (*d*–2) Horizontal, tubular boiler 60″ diam. 14′ 3″ long, with 56 tubes, 4″ diam. x 13′ long, with grates, fronts, etc. complete, f. o. b. Knoxville...	650.00	
Setting same complete, incl. foundations.....	250.00	
Steam and feed water piping and connections.....	100.00	
Uptake and dampers.....	25.00	
	1,025.00	
Add 20 %.....	205.00	
		$1,230.00
595 C. (*a*–2) 4 additional gravity filters of the Warren type, each 10′ 6″ diameter, with connecting piping, valves, shafting, pulleys, hangers and belting, operating floor, etc.....	$4800.00	
(*b*–2) Sundry foundations, drainage, etc.....	50.00	
	$4850.00	
Add 20 %.....	970.00	
		$5,820.00
D. Grading and fencing:		
Additional sodding 150 yds. at 10 cts.....	15.00	
Add 20 %.....	3.00	
		18.00

596 VII.—*Additions During Year Ending March* 31, 1898.

(Including North Knoxville Works and Excluding L. B. Works.)

1. Real estate. Nothing accounted.

2. Plant and improvements at river station:

H. Construction of Front St. across pumping station property. Changing two force mains, rebuilding stairs, coal chute, walks, etc., material and labor.....	$520.00	
Add 20 %.....	104.00	
		$624.00

3. Reservoir. Nothing accounted.

4. Distribution Pipes and appurtenances:

Pipe accounted for at $17.00 per 2000 lbs. f. o. b. Knoxville, except 3″ which is at $20.

20″ 4 ft. at 2.14.....	8.56
14″ 5 ft. at 1.25.....	6.15
10″ 168.2 ft. at .78.....	123.40
8″ 101.3 ft. at .61.....	61.79
6″ 1,623.6 ft. at .46.....	746.86
4″ 612.4 ft. at 33.....	202.09
3″ 1,020.9 ft. at .29.....	296.96

Rock work on 3,525.4 ft. at 0.01 cu. yds.:

35.25 cu. yds. at 1.75	61.68	
Replacing macadam 1,763 ft. at 0.06	105.73	
Furnishing and setting pipe valves and stop cocks:		
1 14″ valve	58.00	
1 8″ "	31.50	
Br't f'w'd.	$1,691.87	
597	1,691.87	
2 6″ valves at 13	26.00	
6 3″ valves at 6.50	39.00	
1 4″ valve	8.75	
11 valve boxes, set at $3	33.00	
3 1½″ sutematic air valves on force main at $15.00	45.00	
3 brick chambers for same with iron cover at $20	60.00	
	$1,903.62	
Add 20%	380.72	
		$2,285.34
Less net credits for pipe, etc., taken up (old pipe accounted as stated under II:		
2″ 31.6 ft. at (No value)		
1¼″ 17.5 ft. at "		
1 207 ft. at "		
Valves 1 14″	54.00	
1 valve box	2.50	
		56.50
Net amount distribution pipes laid one year to March 31st, 1898		2,227.84
5. Service pipes and appurtenances:		
About 270 addition- services at $8	2,160.00	
Less receipts at $5.00 each	1,350.00	
Fair net cost of services	$810.00	
Add 20%	162.00	
		972.00
598 6. Meters, boxes and connections:		
1½″ and ⅝″ meters and connections at	$10.50	
2¼″ do. at $15.75	31.50	
1 1″ meter and connections	21.00	

1 2″ do.	62.00	
3 meter boxes and setting at	40.00	
	$165.00	
Add 20%	33.00	
		198.00

7. Tools, teams, vehicles, office furniture:

Tapping machinery, etc., estimate	100.00

No percentage charged.

8. North Knoxville. Merged into general distribution.

9. High service pumping station and Filter Plant. (Nothing accounted.)

10. Standpipr on Reservoir Hill. (Nothing accounted.)

599 VIII.—*Additions During Year Ending M'ch 31st, 1899.*

1. Real estate. Nothing accounted.

2. Plant and improvements at river station:

G. (*i*) 3″ suction pipe from screen wall to pump pit, labor and material	$50.00	
Add 20%	10.00	
		60.00

Reservoir:

Wire feneing around basin, Labor $35.00, Material $70.00	105.00	
Add 20%	21.00	
		126.00

4. Distribution pipe and appurtenances: (Pipe accounted for at $17. per 2000 lbs. f. o. b. Knoxville except 3″ which is $20.00.)

10″ 181.5 ft. at 78 cts.	141.57
8″ 609.3 ft. at 61 cts.	371.67
6″ 3,384.6 ft. at 46 cts.	1,556.92
4″ 340.5 ft. at 33 cts.	112.37
3″ 2,257.5 ft. at 29 cts.	857.68

Rock work on 7,473.4 ft. at 0.01 cu. yd.:

74.74 cu. yds. at $1.75	130.78
Replacing macadam etc. 3,737. ft. at .06	224.22
Furnishing, setting and connecting 3 fire hydrants, complete at $37.	111.00
Forward	$3,506.21

600

Forward	$3,506.21	
Furnishing and setting valves and stop cocks:		
8 6″ valves at 13.	104.00	
1 4″ valve at 8.75	8.75	
13 3″ valves at 6.50	14.50	
22 valve boxes set at 3.00	66.00	
	$3,769.46	
Add 20%	753.89	
		$4,523.35
Less net credits for pipe taken up (old pipe accounted for as stated under II):		
6″ pipe, 9′ at 14 cts.	1.26	
2″ " 464.4′ (No value)		
¾″ " 291.′ "		
½″ " 291.′ "		
1 fire hydrant	27.00	
Valve and stop cocks, 1 6″	11.50	
2 2″ at 2.50	5.00	
1 ¾″	.60	
4 valve boxes at 2.50	10.00	
Total net credits		$55.36
Net amount distribution Pipes laid, 1 year to M'ch 31st. 1899		$4,467.99

601 5. Service pipes and appurtenances:

About 315 additional services at $8	$2,520.00	
Credit by receipts at rate of $5. ec	1,575.00	
Fair net cost of services	945.00	
Add 20%	189.00	
		$1,134.00
6. Meters, boxes, and connections:		
9 ½″ and ⅝″ meters and connections at $10.50	94.50	
5 ¾″ do. at 15.75	78.75	
1 1¼″ do.	41.50	
1 2″ do.	62.00	
16 meter boxes and setting same at $8.	128.00	
	$404.75	
Add 20%	80.95	
		485.70
Credit:		
1 1″ meter and connections removed at 21		21.00
		$464.70

7. Tools, teams, vehicles, office furniture:

Tapping machines, etc. estimated at.....		225.00

No percentage added.

8. North Knoxville. Merged into General Distribution.

9. High service Pumping Station and Filter Plant. (Nothing accounted.)

10. Standpipe on Reservoir Hill. (Nothing accounted.)

602 *Additions During Year Ending M'ch 31st, 1900.*

(Including North Knoxville Works, Lonsdale-Beaumont Works Accounted for Separately at End.)

1. Real estate:

2. Lot of land on Gay Street used for office purposes fronting 25 ft. on Gay Street and extending Westerly about 140 ft. 2″ to alley purchased from Sam. McKinney, Nov. 1899, without building. (No per-cent. added)		$5,500.00
E. Office building on above lot.....	$2,500.00	
Improvements, etc. heating and plumbing, new floors, shop, supplies, and wagon shed, etc. etc.....	1,650.00	
	$4,150.00	
Add 20%.....	330.00	
		4,480.00

2. Plant and Improvements at River Station.

A. New engine house:

f. Electric lighting, labor and material.....	60.00	
Add 20%.....	12.00	
		72.00

E. Coal Chute, Shed and Pocket.

(c) Wagon scales:

Excavations 50 cu. yds. at 30 cts.....	$15.00	
603 Forward	$15.00	
18,000 brick, laid in cement at $15..	270.00	
100′ of 8″ drain pipe laid at 25c.....	25.00	
1500 ft. B. M. lumber at 16.00.....	24.00	
Scales and sundry hardware.	45.00	
Carpenter work, paints and painting.....	35.00	
Macadamizing roadway,—65 sq. yds. at 20c.....	13.00	
	$427.00	
Add 20 %.....	85.40	
		$512.40

F 2. Fence around Craig St. lot:

350 ft. of 7′ picket fence, complete, incl. painting, at 50c. per running foot.....	$175.00	
Add 20 %.....	35.00	
		$210.00

G. Pumping machinery and appurtenances:

(j) Suction and discharge pipes—flush out pipe to screen well:

84 ft. of 6″ pipe, 1-6″ gate, gate box, bends, etc. etc.....	70.00	
Labor, tools and hardware.....	50.00	
	$120.00	
Add 20 %.....	24.00	
		$144.00

3. Reservoir. Nothing accounted.

604 4. Distribution Pipes and Appurtenances:
(Pipe accounted for at $28. per 2000 lbs. f. o. b. Knoxville, Except 3″ which is $32.)

12″ 263.0 ft. at 1.51	$356.73	
10″ 2,358.8 ft. at 1.11.....	2,618.27	
8″ 4,150.1 ft. at .86.....	3,569.09	
6″ 9,544.0 ft. at .63.....	6,012.72	
4″ 726.6 ft. at .44	319.70	
3″ 2,972.1 ft. at .39.....	1,159.12	
Rock work on 20,004.6 ft. at .01 cu. yds.:		
200.05 cu. yds. at 1.75.....	350.09	
Replacing macadam on 10,000 ft. at .06.....	600.00	
Furnishing and setting 5 fire hydrants complete at $37.....	185.00	
Furnishing and setting pipe valves and stop cocks 2 12″ valves at $39.50.....	79.00	
1 10″ valve at.....	30.50	
11 8″ valves at 21.50.....	236.50	
15 6″ valves at $13.00.....	195.00	
6 4″ valves at $8.75.....	52.50	
12 3″ valves at 6.50.....	78.00	
Furnishing and setting 47 valves boxes at $3.00.....	141.00	
	$15,983.22	
Add 20 %.....	3,196.64	
		$19,179.86

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Forward		$19,179.86
Less net credit for pipe etc. taken up (Old pipe accounted as stated under II)		
Taken up:		
6″ 105′ at 30 cts	$31.50	
4″ 105′ at 18 cts	347.40	
3″ W. I. 102′ (No value)		
2″ " 4.680.4′ "		
1½″ W. I. 3,021.5 at (No value)		
1¼″ W. I. 1,195.0′ "		
1″ " 697.5′ "		
¾″ " 1,004.8′ "		
½″ " 317.0′ "		
Fire hydrants, 3 at $27.00	81.00	
Valves:		
2 4″ at 8.00	16.00	
1 3″ at 6.00	5.00	
5 2″ at 2.50	12.50	
4 1½″ at 2.00	8.00	
2 1¼″ at 1.40	2.80	
1 1″	1.00	
2 ¾″ at .60	1.20	
1 ½″	.40	
18 valves boxes at 2.50	45.00	
Total net credits		551.80
Net amount distribution pipe laid, 1 year to March 31st, 1900		$18,628.06

606 5. Service Pipes and Appurtenances.

Number of services added to M'ch 31st. 1900:		
208 at $8.00	$1,664.00	
Credit by receipts at rate of $5. each	1,040.00	
Fair net cost of services	624.00	
Add 20 %	124.80	
		$748.80
6. Meters, boxes, and connections:		
51 ½″ and ⅝″ meters and connections at $10.50	$535.50	
11 ¾″ do. at 15.75	173.25	
4 1″ do. at 21.00	84.00	
2 1½″ at 41.50	83.00	

3 2″ at $62.00	186.00	
2 4″ at 250.00	500.00	
73 boxes and setting same, at $8.00	584.00	
	$2,145.75	
Add 20 %	429.15	
		$2,574.90

7. Tools, teams, vehicles, office furniture, tapping machines etc. estimated at 750.00

(No percentage charged.)

8. North Knoxville; Merged into General Distribution.

9. High Service Pumping Station and Filter Plant;

A. Buildings:

Furnishing and attaching lightning rod to chimney	$50.00	
Add 20 %	10.00	
		$60.00

607 Extension to settling basin:

260 cu. yds. excavation and regrading at 30c	$78.00	
103.6 cu. yds. Portland cement concrete in place complete, at $7.50	777.00	
223 sq. yds. of Portland cement plastering, 2 coats at $1.00	223.00	
Lumber for frames, forms, etc. at $1. per cu. yd. of concrete	103.60	
172 ft. of drainage channel incl. plank covers, weights, etc. at 75c. per foot	129.00	
Portland cement concrete floor 6″ thick, 98⅓ sq. yds. at $2.00	196.67	
8000 brick laid in Portland cement, complete, at $18	144.00	
Laying 6″ and 8″ drains, incl. 2 manholes, gates, etc	150.00	
Cutting openings between old and new basin, rebuilding deflecting walls in old basin, handling water, etc	150.00	
	$1,951.27	
Add 20 %	390.25	
		$2,341.52

10. Standpipe on Reservoir Hill. (Nothing accounted.)

608 *IX. Lonsdale-Beaumont Works.*

Total physical plant at the time of purchase as of Jan'y 1st, 1900, and here accounted as of the fiscal year ending March 31st, 1900. Total purchase cost about..	$120,000.00

Estimated Construction Cost of Entire Plant.

X. Real estate, L. B., not including improvements:

Tillery springs lot 14 acres	1,000.00
(Other spring lots were leased.)	
Pumping station lot on Middlebrook road and Third Creek, about 1½ acres	1,000.00
Standpipe lot, Beaumont addition	600.00
Rights of way:	
Middlebrook Park Ass'n gravity pipe line;	
M. D. Swan, "	
Susan J. Scruggs, "	
Wm. D. May and wife, "	
and others	500.00
Water rights, M. D. Swan	500.00
Total	$3,600.00

11. Improvements on real estate, L. B. (exclusive of pumping station lot and standpipe lot):

Well and appurtenances at Griffin Spring	1,000.00
Do. at Blanc. Spring	750.00
Do. at May and Nickle Springs	250.00
Carried over	$2,000.00

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Forward	$2,000.00
Gravity pipe line and connections from springs to pumping station:	
21,500 ft. more or less, 12" vitrified pipe, laid at $1	21,500.00
3,500 ft. more or less 12" cast iron pipe, laid at $1.50	5,250.00
Masonry, valves and sundry appurtenances	1,000.00
	$29,750.00
Add 20%	5,950.00
Total	$35,700.00

12. Improvements, buildings, and machinery at pumping station, L. B.:

Impounding Reservoir, excavated in solid rock, near creek, about 50 ft. in diam. and 24 ft. deep, with metal roof and appurtenances	$5,000.00

Engine and boiler house with excavation and grading..	2,500.00
2 Horizontal tubular boilers, 54-in. diam. x 14 ft. long, with uptake and stack, and foundations	2,000.00
2 Deane duplex compound, non-condensing, pumping engines, covered and lagged with Russia iron, with boiler feed pump, gages, lubricators, oilers, etc., 12 & 18½ x 10¼ x 10″ stroke, f. o. b. cars.....	2,200.00
Foundations	300.00
Erecting main connections, etc.....	500.00
Steam piping, boiler feed piping, hot water heater, etc..	350.00
	$12,850.00
Add 20%	2,570.00
Total.....	$15,420.00

610 13. Standpipe L. B. diam. 25 ft. x 70 feet high Including foundation..... $6,400.00
Add 20 %..... 1,280.00

$7,680.00

14. Distribution Pipes and appurtenances, including Force main L. B.

As acquired by the K. W. Company and measured and determined by it (weights found to be somewhat heavier than the K. W. Company standard, but estimated same with pipe at $25.00 per 2000 lbs.)

12″	cast iron	9,774.2 ft.	at	$1.29 (All original).....	$12,608.72
10″	"	5,094.8 "	"	1.02	5,196.70
8″	"	3,623.6	"	.79	2,862.64
6″	"	17,563.3	"	.58 { All but about	10,186.71
4″	"	12,659.1	"	.41 { 1000′ is original }	5,190.23
3″	"	4,042.8	"	.33	1,334.12
2″ W. I.	"	11,634.9	"	.24	37,379.22
1 ½″	"	3,288.6	"	.20	657.72
1 ¼″	"	1,025.4	"	.17	174.32
1″	"	13,114.5	"	.14	1,836.03
¾″	"	3,471.2	"	.10	347.12
½″	"	637.6	"	.09	57.38

Rock excavation on 35,930 ft. at .01 cu. yd.:

859.3 cu. yds. at $1.75.....	1,503.78
Brought over.....	$44,747.85

611

Brought over.....	$44,747.85
Replacing macadam, 26,380 ft. at .06.....	1,582.80
Furnishing and setting 49 fire hydrants at $37.....	1,813.00

Furnishing and setting valves and stop cocks:

4 12″ valves at	$39.50	158.00
4 10″ "	30.50	122.00
4 8″ "	21.50	86.00
14 6″ "	13.00	182.00
12 4″ "	8.75	105.00
3 3″ "	6.50	19.50
9 2″ stop cocks at	3.00	27.00
2 1½″ "	2.40	4.80
2 1¼″ "	1.75	3.50
22 1″ "	1.20	26.40
8 ¾″ "	.75	6.00
84 valve boxes at	$3	252.00
		$49,135.85
Add 20 %		9,827.17
Total		$58,963.02

15. Service Pipes and Appurtenances, L. B.
(Assumed to have been laid originally without direct expense to the Company, but kept in repair and renewed from time to time by it, thus involving maintenance and depreciation but no interest charges)

Total number of services March 31st. 1900 423, at a cost value each complete, of about $8.00 ..... $3,384.00

612 16. Meters, boxes, and connections, L. B.:

27 ½″ and ⅝″ meters and connections at $10.50	$283.50
3 ¾″ do. at 15.75	47.25
1 1″ do. at 21.00	21.00
3 1½″ do. 41.50	124.50
3 2″ do. 62.00	186.00
37 Meter Boxes and setting same at $8.00	296.00
	$958.25
Add 20 %	191.65
	$1,149.90

17. Tools, teams, vehicles, office furniture and fixtures, etc., L. B.:

Estimated at 500.00

(No percentage charged.)

375

613

X.

Additions During Year Ending March 31, 1901.

(Including North Knoxville and Lonsdale-Beaumont Works.)

1. *Real estate:*

E'. New roof, paving alley, etc.	$160.00	
Add 20%	32.00	
		$192.00

2. *Plant and Improv-ments at River Station:*—

A. Engine house and pit:

(*a*) Below ground line (about Gr. 52.00)

Cutting tunnel between two pits, say	$200.00	
Taking down inner course of brick of pump pit, including staging, etc.	$150.00	
11,500 White Enamelled brick, f. o. b. Knox. for walls of pit, tunnel, foundations, etc. at $75.00	$862.50	
Hauling, handling and laying same in Portland cement, at $36	$414.00	
Common brick in backing and retaining wall of tunnel, etc., in Portland cement, including cutting and building up openings, 20,000 at $18	$360.00	
Cement floor in pit, say 400 sq. ft. at 16⅔c.	66.67	
Wooden floor in tunnel, say	12.00	
Stairway to pit	285.00	
Marble sills and rail across openings	20.00	
Removing old *t*sairway and replacing in Deane pit	25.00	
Forward	$2,395.17	

614

Forward		$2,395.17

(*b*) Above ground line:

Railing around pit, erected	$75.00	
Cement Floor around pit, 400 sq. ft. at 16⅔c.	66.67	
Bricking up openings, 3,000 brick in lime at $13.00	39.00	
Cutting through two doors, incl. doors, frames, brickwork, sills etc. at $15	30.00	
Removing and rebuilding brick lavatory	200.00	
Plumbing and drainage to same	65.00	
Electric wiring and lighting	25.00	
		500.67
		$2,895.84
Add 20%		579.17
		$3,475.01

B. Boiler House:—Extension, about 16′ 6″ x 42′ 10″, of brick, with slate roof.

(*a*) Below ground line, about Gr. 52:

Earth excavation and regrading, 190 cu. yds. at 30c	$57.00	
14,500 brick in foundations laid in cement at 15	217.50	
(*b*) Above Gr. 52:		
18,000 brick in lime mortar at 13	234.00	
4 door sills set, averaged at $7.50	30.00	
2 Gable windows at $7.50	15.00	
Changing and resetting 3 windows, frames and sills, at 5	15.00	
Forward	$568.50	
615 Forward	$568.50	
3 doors and frames 5′ 6″ x 8′ at $10	30.00	
1 " " " 3′ 6″ x 7′ 6″ at $7.50	7.50	
Carpenter work and painting, say	12.50	
Floor of extension 34 sq. yds. Portland Cement flooring at $1.50	51.00	
Floor of old boiler house where boilers were removed from 50 sq. yds. at $1.50	75.00	
1800′ B. M. in rafters, purlins, etc. at 30	54.00	
2300′ B. M. 1¼″ matched roofing etc. at 30	69.00	
Carpenter work, incl. mouldings, trimmings, etc	80.00	
Painting and oiling, say	15.00	
Slating, 10 sqs. at $7.00	70.00	
Flashing, gutters, conductors and drains	35.00	
	1,067.50	
Add 20%	213.50	
		$1,281.00

C. Tool and storage House, about 18′ x 30′:

13000 brick laid in cement at 15	195.00	
Lumber in roof 450′ B. M. rafters and purlins at 16	7.20	
600′ B. M. Boarding at 16	9.60	
Roofing 5.5 squares felting at $3.00	17.50	
Doors, frames, etc	12.50	
Carpenter shop, painting, etc	20.00	
	$261.80	
Add 20%	52.36	
		$314.16

616 G. Pumping Machinery and Appurtenances:

(*d*–4) 2 Additional boilers and appurtenances, (Replacing those set in 1889) Each 66″ diam. x 19′–4″ long, with tubes 4″ diam. x 18′ long, fitted with Hawley Down Draft Furnaces, and with fronts, grates, etc.

Boilers and fittings complete, f. o. b. Knoxville, without Hawley attachments	$1,800.00	
Hawley Down Draft Furnaces	1,300.00	
Setting same complete, incl. foundations	900.00	
Steam piping and water connections and covering	650.00	
Blower Engine and appurtenances, incl. setting etc	900.00	
Damper regulator, incl. valves and connections	80.00	
Uptake, flue and damper connections, incl. smoke pipe	250.00	
	$5,880.00	
Add 20%	1,176.00	
		$7,056.00

617 (*k*) 1 Worthington direct acting, triple expansion, condensing, duplex steam pumping engine, having 15″ high pressure, 23″ intermediate pressure and 38″ low pressure steam cylinders, 20″ water plungers, all with 24″ stroke:

1 surface condenser.		
1 Worthington vacuum pump, having 6″ steam and 8½″ vacuum chambers, all with 6″ stroke.		
1 Automatic receiver with duplex jacket pump, and sundry appurtenances, f. o. b. Knoxville	$11,865.00	
Cartage, erecting, etc., incl. removing Davidson pumps	1,500.00	
	$13,365.00	
Add 20%	2,673.00	
		$16,038.00

(*l*) Foundations for Worthington pumping engines:

10,500 brick in Portland cement at $18	$189.00	
7 pump foundation stones, set	100.00	
Concrete, lumber, etc., say	11.00	
	$300.00	
Add 20%	60.00	
		360.00

(*m*) Suction and discharge pipes:

1–20″ Suction gate, f. o. b. Knoxville.....	$120.00	
1–20″ Discharge gate, with yoke and hand wheel	112.00	
1–20″ Check with by-pass, complete	275.00	
Forward.....	$507.00	
618		
Forward.....	507.00	
Sundry suction and discharge pipes.....	325.00	
Bolts, washers, labor, etc., incl. anchorage..	175.00	
	$1,007.00	
Add 20%.....	201.40	
		1,208.40

H. Stairway from Front St., regrading, etc.:

Stone foundation for stairs	$30.00	
Lumber, 2500′ B. M. at 16., in stairs.....	40.00	
3500 cu. yds. earth moved in grading at 20c.	700.00	
20 cu. yds. macadam in walks, etc., at 1.10..	22.00	
500 sq. yds. sodding at 10c.....	50.00	
Fencing, railing, etc.....	20.00	
Drain pipes, catch basins, etc.....	35.00	
Grass seed.....	15.00	
	$912.00	
Add 20%.....	182.40	
		1,094.40

I. Intake tower:

Coffer dam, 5000′ B. M. lumber at 16.....	$80.00	
Nails, bolts and hardware, labor, building, etc.	160.00	
Pumping water 60 days at 2.50 per day ...	150.00	
Excavation, 800 cu. yds. earth at 50c.....	400.00	
" 135 " " rock in water at 3.50.....	472.50	
460 cu. yds. Portland cement concrete at $9. complete.....	4,140.00	
6″ Angle iron on nose of tower, erected complete.....	60.00	
Iron I beams, timber and flooring of tower complete.....	90.00	
Forward.....	$5,552.50	
619		
Forward.....	$5,552.50	
Ejector and connection, incl. drainage.....	260.00	
Gates and gratings for port holes, incl. stands, erection, etc.....	1,500.00	

Screens and gratings for intake gal-ery.....	100.00	
24″ influent gate in screen wall, set complete	175.00	
24″ connecting pipe, incl. laying etc.....	250.00	
Bridge and railings to tower, incl. erection.	300.00	
Painting, cleaning, river *guage* and sundries	100.00	
Riprapping, grading, sodding, seeding, etc.	300.00	
	$8,537.50	
Add 20 %.....	1,707.50	
		$10,245.00

3. Reservoir. Nothing accounted.

4. Distribution Pipes and Appurtenances, (incl. North and West Knoxville)

Pipe accounted for at $27.00 per ton.

20″ 24.5 at 3.00.....	73.50
16″ 3,072.2 " 2.11	6,482.34
12″ 5,771.0 at 1.57	7,906.27
10″ 1,540.9 at 1.08	1,664.17
8″ 3,245.4 " .84	2,726.14
6″ 6,018.7 " .61	3,671.41
4″ 2,660.2 " .43	1,143.89
3″ 3,204.8 " .35	1,121.68
2″ (W. I.) 515.0 ft. at .24.....	123.60
1½″ " 58.0 at .20.....	11.60
1″ " " 82.0 at .14.....	11.48
Forward.....	$24,936.08

620

Forward.....	$24,936.08
Rockwork on 26,192.7 ft. at 0.01 cu. yds. 261.93 cu. yds. at $1.75.....	458.38
Furnishing, setting and connecting 8 fire hydrants complete at $37.00.....	296.00

Furnishing and setting pipe valves and stop cocks:

1 20″ valve at $130.00.....	130.00
2 16″ " " 70.00.....	140.00
2 14″ " " 58.00.....	116.00
4 12″ " " 39.50.....	158.00
6 10″ " " 30.50.....	183.00
6 8″ " " 21.50.....	129.00
15 6″ " " 13.00.....	195.00
12 4″ " " 8.75.....	105.00
12 3″ " " 6.50.....	78.00
1 2″ stop cocks at 3.00.....	3.00
1 1½″ " " 2.40.....	2.40
2 1″ " " 1.20.....	2.40

64 valve boxes set at $3.00	192.00	
Furnishing and setting pipe bridge at Clinch Avenue, East	725.00	
	$28,615.40	
Add 20 %	5,723.08	
Forward		$34,338.48

621

Forward		$34,338.48

Less net credits for pipe etc. taken up (old pipe accounted for as stated under II)

Taken up:

16" 24.7 ft. at 1.27	31.37	
10" 4.3 ft. at .60	2.58	
6" 1,924.5 ft. at .28	538.86	
4" 3,099.0 ft. at .17	526.83	
3" 224.6 ft. at .10	22.46	
1½" (W. I.) 328 ft. at (No value)		
1¼" " 84 ft. at "		
1" " 370.7 "		
¾" " 365 "		
7 fire hydrants at 27	189.00	

Valves:

2 16" at 60.00	120.00	
1 14" at 54.00	54.00	
2 10" at 27.00	54.00	
2 6" at 11.50	23.00	
2 4" at 8.00	16.00	
1 3" at 5.00	5.00	
1 2" at 2.50	2.50	
1 1¼" at 1.40	1.40	
12 valve boxes at 2.50	30.00	
Total credits		$1,617.00
Net amount distribution pipes laid, 1 year to March 31st, 1901		32,721.48

622 5. Service pipes and appurtenances;

This year services were laid free of all expense to customers, being paid for wholly by Company.

427 additional services at $8.00	$3,416.00	
Add 20 %	683.20	
		$4,099.20

6. Meters, boxes, and connections:

18 ½" or ⅝" meters and connections at $10.50	189.00	
1 ¾" do	15.75	
2 1½" do. at 41.50	83.00	
4 2" do. at 62.00	248.00	
25 meter boxes and setting same at $8.00	200.00	
	$735.75	
	147.15	
		$882.90
Credit:		
1 4" meter removed		200.00
		$682.90

7. Tools, teams, vehicles, office furniture, etc.:

About	400.00

8. North Knoxville. Merged into general distribution.

9. High service Pumping station and filter plant;

A. Buildings, etc.:

Tool and clothes cabinet, say	$25.00
Add 20%	5.00
	$30.00

623 D. Grading and fencing:

200 sq. yds. sodding at 10 cts	$20.00	
Grass seed, labor etc	10.00	
	$30.00	
Add 20%	6.00	
		$36.00

10. Standpipe. Nothing accounted.

11 to 17. Lonsdale-Beaumont Plant, merged into general plant.

NOTE.—For other general costs and allowances, outside initial cost of physical plant, see p. 107.

624 *Summary to March* 31, 1901, *Tabulated by Years.*

To Dec. 31st, 1891:

1. Real estate		$11,650.00
2. Plant and Improvement at River Station:		
A. Engine House and Pump pit	$9,730.00	
B. Boiler House	1,060.44	

C. Frame Tool and Storage house.....		161.40	
D. Chimney Stack and flue.....		2,238.74	
E. Coal chute.....		543.31	
F. Store House and Fencing.....		269.80	
G. Pumping Machinery and Appurtenances:			
(*a*) Davidson Pumps and appurtenances, erected.....	$13,200.00		
(*b*) Foundations for do.....	1,500.00		
(*c*) Suction and discharge connection for do.....	2,443.51		
(*d*–1) First pair Boilers, etc. set.....	3,042.00		
(*d*–2) Second do.....	2,982.00		
		23,167.51	
			37,191.20
3. Reservoir			33,000.00
4. Distribution Pipes and Appurtenances:			
A. Original construction to 1884.....		63,093.12	
A. Additional construction to Dec. 31st, 1891.....		77,009.56	
			140,102.68
			$221,943.88
625			
			$221,943.88
5. Service Pipe and Appurtenances. Not accounted.			
6. Meters, Boxes and connections.....			1,696.20
7. Tools, Teams, Vehicles, Office Furniture, Fixtures, etc			2,000.00
8. Distribution Pipes and Appurtenances in North Knoxville			32,271.25
Total to Dec. 31, 1891.....			$257,911.33
To March 31, 1893:			
4. Distribution Pipe and Appurtenances....	$14,045.87		
5. Service Pipe and Appurtenances, not accounted.			
6. Meters, Boxes and Connections.....		401.70	
7. Tools, Teams, Office Furniture, etc.....		1,100.00	
8. Distribution Pipes and Appurtenances in North Knoxville.....		394.32	
			15,941.89
Total to March 31, 1893.....			$273,853.22

To March 31, 1894:			
4. Distribution Pipes and Appurtenances..		$8,373.94	
5. Service Pipes and Appurtenances. Not accounted.			
6. Meters, Boxes and Connections.....		442.60	
7. Tools, Teams, Office Furniture, etc.....		625.00	
8. Distribution Pipes and Appurtenances in North Knoxville.....		1,263.42	
9. High Service Pumping Station and Filter Plant:			
A. Buildings.....	$2,745.66		
B. Pumping Machinery:			
(*d*–1) Boilers and Appurtenances.....	1,008.00		
		3,753.66	
10. Standpipe on Reservoir Hill.....		13,505.89	
			27,964.51
Total to March 31, 1894.....			$301,817.73
626 Forward.....			$301,817.73
To March 31, 1895:			
2. Plant and Improvements at River Station:			
A. New Engine House and vertical engine pit, and screen well.....	$9,700.44		
A'. New 24" Cast Iron Intake Conduit	2,622.90		
		12,323.34	
4. Distribution Pipes and Appurtenances...		45,517.51	
5. Service Pipes and Appurtenances. Nothing accounted.			
6. Meters, Boxes, and Connections		439.80	
7. Tools, Teams, Office Furniture, etc.....		350.00	
9. High Service Pumping Station and Filter Plant:			
A. Buildings, incl. Chimney..	$12,961.92		
B (*a*–*b*–*c*). Engines, foundations and connections.....	4,348.98		
(*d*–1) Boilers and appurtenances.....	360.00		
C. Filtration Plant.....	30,271.56		
		47,942.46	
			106,573.11
Total to March 31, 1895.....			$408,390.84

To March 31, 1896:

2. Plant and Improv-ments at River station:			
A. New Engine House and Vertical Engine Pit, and screen well		$7,175.64	
B. Boiler House		2,707.50	
C. Tool and Storage House		25.00	
D. Chimney Stack and Inclined Flue		225.00	
E. Coal Chute ($597.12) with new Coal Shed and Pocket ($93.76)		1,490.88	
G. Pumping Machinery and Appurtenances:			
(*d*-3) Additional Boilers		4,788.00	
Forward		$16,412.02	$408,390.84
627			
Forward		16,412.02	408,390.84
e. Deane Vertical Pump	$15,810.00		
f. Foundations, Deane Pump	354.12		
g. Suction and Discharge Pipe	1,647.60		
		17,811.72	
		34,223.74	
4. Distribution Pipes and Appurtenances		4,854.30	
5. Service Pipes and Appurtenances		900.00	
6. Meters, Boxes and Connections		404.10	
7. Tools, Teams, Office Furniture, etc		50.00	
9. High Service Pumping Station and Filter Plant:			
A. Buildings, etc		132.00	
D. Grading and Fencing		1,046.40	
			41,610.54
Total to March 31, 1896			450,001.48

To March 31, 1897:

2. Plant and Improv-ments at River Station:		
G (*h*). Pumping Machinery and Appurtenances	$258.00	
4. Distribution Pipes and Appurtenances	4,026.55	
5. Service Pipes and Appurtenances	720.00	
6. Meters, Boxes and Connections	387.90	
7. Tools, Teams, Office Furniture, etc	50.00	

9. High Service Pumping Station and Filter Plant:			
B. Pumping Machinery:			
(*d*–2) Boilers and appurtenances.....		1,230.00	
C. Filtration Plant.....	5,820.00		
D. Grading and Fencing.....	18.00		
		7,068.00	
			12,510.45
Total to March 31, 1897			$462,511.83
628 Forward.....			$462,511.83
To March 31, 1898:			
2. Plant and Improv-ment at River Station		$624.00	
4. Distribution Pipes and Appurtenances..		2,227.84	
5. Service Pipes and Appurtenances.....		972.00	
6. Meters, Boxes and connections.....		198.00	
7. Tools, Teams, Office Furniture, etc.....		100.00	
			4,121.84
Total to March 31, 1898			$466,633.67
To March 31, 1899:			
2. Plant and Improv-ment at River Station		$60.00	
3. Reservoir.....		126.00	
4. Distribution Pipes and Appurtenances..		4467.99	
5. Service pipes and Appurtenances.....		1134.00	
6. Meters, Boxes and Connections.....		464.70	
7. Tools, Teams, Office Furniture, etc.....		225.00	
			6,477.69
Total to March 31, 1899			$473,111.36
To March, 1900:			
1. Real Estate:			
E. Office Building Lot.....		$5,500.00	
E'. Office Building & Improv-ment.....		4,480.00	
2. Plant & Improv-ments at River Station:			
A. New Engine House, etc...	$72.00		
E. Coal Chute, Shed and Pocket.....	512.40		
F2. Fence around Craig St. Lot.....	210.00		
G. Pumping Machinery & Appurtenances.....	144.00		
		938,40	
			$10,918.40
			$473,111.36

629

Forward		$10,918.40	$473,111.36
4. Distribution Pipes and Appurtenances		18,628.06	
5. Service Pipes and Appurtenances		748.80	
6. Meters, Boxes and Connections		2,574.90	
7. Tools, Teams, Office Furniture, etc		750.00	
9. High Service Pumping Station and Filter Plant:			
Buildings	$60.00		
Extension to settling basin	2,341.52		
		2,401.52	
Lonsdale-Beaumont Works:			
1. Real Estate	3,600.00		
2. Improv-ments on real estate exclusive of pumping station, and stand pipe lots	35,700.00		
12. Improv-ments, buildings, and machinery, at L.-B. pumping station	15,420.00		
13. Stand Pipe	7,680.00		
14. Distribution Pipes and Appurtenances	58,963.02		
15. Service Pipe and Appurtenances. Nothing accounted.			
16. Meters, Boxes, and Connections	1,149.90		
17. Tools, Teams and Office Furniture, etc	500.00		
		123,012.92	
			$159,034.60
Total to March 31, 1900			$632,145.96

630

Forward			$632,145.96
To March 31, 1901:			
1. Improv-ments on Real Estate		$192.00	
2. Plant & Improv-ments at River Station:			
A. Engine House and Pit	$3,475.01		
B. Boiler House	1,281.00		
C. Tool and Storage House	314.16		
G. Pumping Machinery and Appurtenances:			
(*d*-4) Two new Boilers	7,056.00		

(*k*) New Worthington Pump	$16,038.00			
(*l*) Foundations for same	360.00			
(*m*) Suction and Discharge Pipes	1,308.40			
		17,606.40		
H. Stairway and Grading		1,094.40		
I. Intake Tower		10,245.00		
			$41,071.97	
4. Distribution Pipes and Appurtenances			32,721.48	
5. Service Pipes and Appurtenances			4,099.20	
6. Meters, Boxes and Connections			682.90	
7. Tools, Teams, Office Furniture etc			400.00	
9. High Service Pumping Station and Filter Plant:				
A. Buildings, etc		$30.00		
B. Grading and Fencing		36.00		
			66.00	
				79,233.55
Total to March 31, 1901				$711,379.51
631 Forward				$711,379.51

The initial construction cost of the physical plant having been determined as above, there remains to be provided and accounted for, allowances for the following—none of which are comprised above in the physical plant—to wit, General administration services, and expenses not compensated in salaries or charged to operation, contingencies, legal services and expenses, litigation, charter and franchise charges and allowances, including the renewal thereof from time to time, and contracts say 5% and the time, costs and arrears expended and incurred in creating and building up the business, in creating a "live and going plant,"—the elements of investment value known as "going concern," 15%. For these 20% is considered a fair and conservative allowance which applied to the foregoing cost of the physical plant equals..... $142,275.90

Total cost of physical plant & property..... $853,655.41

632 *Summary to March* 31, 1901, *Classified by Subdivisions of the Plant.*

1. Real Estate, to Dec. 31, 1891		$11,650.00	
Year ending March 31, 1900:			
E'	5,500.00		
E'	4,480.00		
		9,980.00	
L.-B. Works		3,600.00	
Year ending M'ch 31, 1901		192.00	
			$25,422.00
2. Plant and Improv-ments at River Station:			
A. Engine House and Pits:			
To Dec. 31, 1891	9,730.00		
Year ending M'ch 31, 1895.	9,700.44.		
New Intake:			
1895	2,622.90		
1896	7,175.64		
1900	72.00		
1901	3,475.01		
		32,775.99	
B. Boiler House, etc.:			
To Dec. 31, 1891	1,060.44		
Year ending M'ch 31, 1896.	2,707.50		
1901	1,281.00		
		5,048.94	
C. Tool and Storage House:			
To Dec. 31, 1891	161.40		
Year ending M'ch 31, 1896.	25.00		
1901	314.16		
		500.00	
Forward		$38,325.49	$25,422.00

633

Forward		$38,325.29	$25,422.00
B. Chimney, to Dec. 31, 1891.	$2,238.74		
Year ending M'ch 31, 1896.	225.00		
		2,463.74	
E. Coal Chute, Shed, etc., to Dec. 31, 1891	543.31		
Year ending M'ch 31, 1896.	1,490.88		
1900.	512.40		
		2,546.59	
F. Store House and Fence, Craig St. to Dec. 31, 1891.	289.80		
Year ending M'ch 31, 1900.	210.00		
		499.80	

G. Pumping Machinery, etc., Engines, Foundations, and Connections:			
(*a–b–c*) To Dec. 31, 1891.....	17,143.51		
(*e–f–g*) Year ending M'ch 31, 1896.....	17,811.72		
(*h*) 1897.....	258.00		
(*i*) 1899.....	60.00		
(*j*) 1900.....	144.00		
(*k–l–m*) 1901.....	17,606.40		
		52,023.63	
Boiler and Appurtenances:			
(*d*–1–2) To Dec. 31, 1891.....	6,024.00		
(*d*–3) Year ending M'ch 31, 1896.....	4,788.00		
(*d*–4) 1901.....	7,056.00		
		17,868.00	
H. Construction Front St. Outside Stair and Grading:			
Year ending M'ch 31, 1898.	624.00		
1901.	1,094.40		
		1,718.40	
I. Intake Tower, 1901.....		10,245.00	
			$126,690.65
			$152,112.65
634			
Forward.....			$152,112.65
3. Reservoir, to Dec. 31, 1891.....		$33,000.00	
Year ending M'ch 31, 1899.....		126.00	
			33,126.00
4. Distribution Pipes and Appurtenances:			
In Knoxville original to 1884.	$63,093.12		
Addition to Dec. 31, 1891.....	77,009.50		
15 mos. ending M'ch 31, 1893.	14,045.87		
Year ending M'ch 31, 1894...	8,373.94		
1895...	45,517.51		
1896...	4,854.30		
1897...	4,026.55		
1898...	2,227.84		
1899...	4,467.99		
1900...	18,628.06		
1901...	32,721.48		
		274,966.22	

8. North Knoxville to Dec. 31, 1891	32,271.25		
15 mos. ending M'ch 31, 1893.	394.32		
Year ending M'ch 31, 1904...	1,263.42		
		33,928.99	
14. Lonsdale-Beaumont to M'ch 31, 1900		58,963.02	
			367,858.23
5. Service Pipes and Appurtenances:			
Year ending M'ch 31, 1896		900.00	
1897		720.00	
1898		972.00	
1899		1,134.00	
1900		748.80	
1901		4,099.20	
			8,574.00
Forward			$561,670.88
635			
Forward			$561,670.88
6. Meters and Connections, to Dec. 31, 1891		$1,696.20	
15 mos. ending M'ch 31, 1893		401.70	
Year ending " " 1894		442.60	
1895		439.80	
1896		404.10	
1897		387.90	
1898		198.00	
1899		464.70	
1900		2,574.90	
16. Lonsdale-Beaumont to March 31, 1900..		1,149.90	
Year ending M'ch 31, 1901		682.90	
			8,842.70
7. Tools, Teams, Office Furniture, etc., to Dec. 31, 1891		2,000.00	
15 mos. ending M'ch 31, 1893		1,100.00	
Year ending M'ch 31, 1894		625.00	
1895		350.00	
1896		50.00	
1897		50.00	
1898		100.00	
1899		225.00	
1900		750.00	
17. Lonsdale-Beaumont to M'ch 31, 1900...		500.00	
Year ending M'ch 31, 1901		400.00	
			6,150.00
8. North Knoxville. Heretofore accounted			$—
Forward			$576,663.58

636

Forward			$576,663.58
9. High Service Pumping Station and Filter Plant:			
A. Buildings:			
Year ending M'ch 31, 1894		$2,745.66	
1895		12,961.92	
1896		132.00	
1900		2,401.52	
1901		30.00	
			18,271.10
B. Pumping Machinery and Appurtenances:			
(*a*–*b*–*c*) Engines, Foundations and Connections:			
Year ending M'ch 31, 1895	4,348.98		
		4,348.98	
Boiler and Appurtenances:			
(*d*–1) Year ending M'ch 31, 1894	1,008.00		
(*d*–1) 1895	360.00		
(*d*–2) 1897	1,230.00		
		2,598.00	
C. Filtration Plant:			
Year ending M'ch 31, 1895	30,271.56		
1897	5,820.00		
		36,091.56	
D. Fencing and Grading:—			
Year ending M'ch 31, 1896	1,046.40		
1897	18.00		
1901	36.00		
		1,100.40	
			62,410.04
10. Standpipe on Reservoir Hill:—			
Year ending M'ch 31, 1895			13,505.89
11. Improv-ments on Lonsdale-Beaumont Real Estate, to M'ch 31, 1900			35,700.00
12. Improv-ments, Buildings and Machinery at Lonsdale-Beaumont Pumping Station to M'ch 31, 1900			15,420.00
Forward			$703,699.51

637

Forward	$703,699.51
13. Standpipe, Lonsdale-Beaumont, to M'ch 31, 1900	7,680.00

14. Distribution Pipe, L. B. Heretofore accounted.
15. Service Pipes and Appurtenances, L.-B. Nothing accounted.

16. Meters, Boxes and Connections, L.-B. Heretofore accounted.
17. Tools, Teams, Office Furniture, etc., L.-B. Heretofore accounted.

Total to March 31, 1901	$711,379.51
Add 20%, (See Page 107)	142,275.90
	$853,655.41

638 Q. I will ask you at this point, for convenience, to name all the separate pieces of real estate, with their separate values, making your first aggregate $25,422.00.

A.	Under "I" and figure "1" "A": At River Pumping Station, between Craig street and the river; "B" Block enclosed by Condon, Lee, Payne and Patterson streets, containing the Reservoir, price paid City for "A" and "B"	$7800.00
C.	Block enclosed by Condon, Pritchard, Payne and Lee Streets, on which filter plant and high service station are built, purchase price	$2950.00
D.	Fronting 50 feet on Craig street, about 150 feet in depth, purchase price	$900.00
		$11650.00

(See p. 23.)

IX. *Acquired with the Lonsdale Beaumont Works.*

1.	Tillery Springs lot, 14 acres	$1000.00
	Pumping Station lot on Middlebrook road and Third Creek, about 1½ acres	$1000.00
	Standpipe lot Beaumont addition	600.00
	Rights-of-way Middlebrook Park Ass'n for gravity pipe line; M. D. Swan, gravity pipe line; Susan J. Scruggs gravity pipe line; William D. May and wife, gravity pipe line and others	$500.00
	Water rights M. D. Swan	$500.00
		$3,600.00

(Page 84.)

(Page 78, IX.)

1. E.	Lot of land on Gay street used for office purposes, fronting 25 feet on Gay street, and extending westerly about 140 ft. 2″ to alley purchased from Sam McKinney, Nov. 1899, Price		$5500.00
E′.	Office Building on above lot	$2500	
639	Other improvements, including heating, plumbing, new floor, shop supplies and wagon shed &c	$1650.00	

The sum of the two items of improvement to wit: $2500 and $1650, makes a total of.....	$4150.00	
To which is added 20 per cent.....	330.00	
		$4480.00
Making a total of the Gay street property.....		$9980.00

(X p. 89)

Real Estate:	
New roof and paving the alley Gay Street property.....	192.00
The total sum of which is.....	$25422.00

Q. Mr. Wheeler, how did you arrive at your valuation of these several items of Real estate?

A. The valuation of all the real estate owned by the Company in 1890 is that at which the property was purchased. The valuation of the Gay street property, as nearly as I can recall, it is an estimated value, taking into account the purchase price and improvements made by the company immediately after acquiring the property. The value here given of the real estate acquired with the Lonsdale Beaumont Works, is an estimate—it was made with some knowledge of the transfer price, the price at which it was acquired by the Beaumont Company, but at a very large reduction from the prices paid by them. It is an estimate. The addition made to the Gay street property is also an estimate of the value of those improvements.

Q. Do I understand that you put in the real estate acquired by the Lonsdale Beaumont, purchased at lower prices than the Lonsdale Beaumont Company paid for it?

640 A. At lower prices than the book price. I am not quite sure whether for those values I relied upon the deed or relied upon certain data received from that Company as to prices they paid for it.

Q. Have you been a purchaser of real estate in Knoxville and about Knoxville to any extent during the last ten years?

A. I purchased three or four pieces of real estate in Knoxville and vicinity—perhaps I should say in the vicinity of Knoxville—during the first five years of the last decade—that is 1892 to 1894.

Q. Do you remember approximately what the population of Knoxville was in the year 1890?

A. I think the United States census for the City of Knoxville for the year 1890, was about 22,000 or 23,000.

Q. Has the city been increasing or decreasing in population since that time?

A. Increasing very largely.

Q. Referring to the real estate owned by the company at the time when you became a stockholder, I will ask you whether in your judgment that property has increased or decreased in value?

A. I think it has increased in value. Perhaps I ought to add

that I have negotiated for property since the date of this schedule of rates, and that fact is brought to my mind by your last inquiry.

Q. In what condition were the books of the Knoxville Water Company at the time when they came into your possession with reference to the data that they afforded for ascertaining the expenditures made by the company up to that time?

A. From what examination I have been able to make the disbursements or expenditures appearing in the books are not dis-
641 tributed as between construction, maintenance and operation of the earlier parts of the account that is the case; the later portions covering that period I have not personally examined, as I am not a bookkeeper. The original works were constructed under what we might call a construction contract for securities paid therefor by the company, and what the bearing of the accounts in the Treasurer's books, as of that date upon the construction, I do not know.

Q. Do the books prior to December 1890 afford adequate information for an analysis and distribution of the property (such as you have made) upon the basis of actual investment, expenditures, alterations and additions?

A. They do not.

Counsel for defendant objects to the question as calling for the opinion of the witness in regard to matters which are not in issue.

Over-ruled by the Court.

Q. Do the books of the company, or other sources of information, furnish you data of the kind referred to in the last question for the entire period subsequent to December 30th 1890?

Same objection as above made by counsel for defendant.

SPECIAL MASTER: I think the question competent.

A. No, no sources of information available to me, or that I know of; there are no books or accounts that show the entire investment cost.

Q. In a condition of affairs such as is shown by your last two answers, to wit: where the books and other sources of information fail to furnish all the data which it is necessary to consider
642 in determining the reasonableness or unreasonableness of water rates, what is the usage in such cases as to the method of reaching a conclusion?

Same objection reserved as above by counsel for defendant. Over-ruled by Special Master.

A. The only method known to me, is to determine a fair construction and investment cost of the property, so far as that affects the reasonableness of rates, by valuing the fair cost of creating the plant—I might say by expert valuation.

Q. What method have you pursued in making your analysis and classification of the property?

A. I have valued each part of the property under the classification to which I have testified, according to my best judgment of its

fair construction cost, that judgment having been based upon experience and knowledge acquired in my connection with these works, and to some extent with other works, the estimate having referred also to the time in which the particular portions of the plant were created or built. In other words, it is not an estimate of what it would cost now to reproduce the plant, but what was the fair necessary cost of producing the plant from time to time as it was originally built and subsequently added to or altered.

Q. Does such a method, in your judgment as an expert in these matters, reach a fair and proper conclusion?

Objected to by counsel for defendant as asking for opinion of the witness.

Over-ruled by the Master.

A. I think it does.

SPECIAL MASTER: I think he is qualified as an expert hydraulic engineer, and with his experience in such properties.

643 Q. Making the question specific, you have reached the conclusion by your classification and analysis that the construction cost of the physical plant, including certain matters referred to in your answer exhibited in the tabulation is $711,379.51?

A. I have.

Q. What method did you follow in valuing cast iron and wrought iron pipes in your analysis?

A. I took into account first, the prevailing prices at which such pipe could be purchased in the open market and delivered at Knoxville as of the date that said pipes were used in construction, and added to that my estimate of the fair and reasonable cost of distributing the pipes, excavating trenches and laying the pipes, making the joints and refilling and restoring the street surfaces, and my allowance for rock and excavation was based upon our general average experience in rock excavation in the City and its vicinity.

Q. How about the earth excavation?

A. The earth excavation is covered by the allowance for trenching and back-filling, and that is based on my general experience in this city, and pipe of this size laid to the depth it is here.

Q. Did you allow a uniform width of ditching?

A. Substantially so; the width of trench which would enable men to work in it, is the determining consideration in pipes up to 10 and 12 inches in diameter; for some of the larger pipes 16" 18" and 24" the trench has to be wider, but that is taken into account in the prices for the pipe laid complete which I have used in this case.

Q. In the matter of quantities of materials in building; what is your method?

A. Derived from the actual dimensions of the buildings so far as we could determine them, as we found them at the time of
644 our purchase of the property in the year 1890 or 1891, and from the additions made thereto from time to time, thereafter. I ought perhaps to say that as to the quantities of pipe laid prior to our purchase in 1890, I had made a careful survey not only

of the surface but by means of excavations to determine the limits of pipes of all sizes, the location of gates and covered portions of the work, not of course uncovering a pipe throughout its whole length, but determined from the ends of the pipes in the streets, and from that survey we have made our construction records, showing every piece of pipe, and the exact length of the pipe in every street and the result of that survey is also incorporated into complete plans which I have here. Of all portions of the work added since 1890 and 1891, we have kept as accurate records as we know how to make and keep in the form of plans and tabulations. These plans embody complete surveys of the whole district supplied, and some of the outlying districts in which we show every building, every street line, the kind of building, whether brick, stone or wood, upon a scale of 100 feet to the inch, which is made with the utmost accuracy of modern methods from steel tape to transit work.

Q. In the construction of works of this kind, is anything properly allowable for engineering services?

A. Yes, sir.

Q. Have you made such an allowance in your estimate and if so what allowance?

A. I have made such allowance in this case. I have allowed for engineering 6% of the construction cost of the physical plant, not including real estate however.

Q. Why did you adopt that figure?

A. Because that is within the cost of such service as I have
645 found it in my experience and my knowledge of similar work in the experience of others. I have had occasion to determine the general cost of engineering, not only by undertaking to do such work on a per diem basis, but having undertaken it on a percentage basis in several instances, and I recall no instance where the cost was so low as six per cent for work of this character.

Q. Where construction work is done by the company through its own employees, and without the intervention of an independent contractor should any allowance for engineer services be made to the company.

A. Oh yes sir. It is a necessary expense, whether the work is done through sub-contracts or general contracts, or done by the company directly?

Q. You have referred in your analysis to contractor's services, risks and profits; I will ask you if an allowance on that account is proper in these cases?

A. Yes sir it is.

Q. Have you made such an allowance, and if so what amount?

A. I have made such an allowance, and the allowance made is approximately 12%. That is intended to cover the contractor's time, services, his expenses as well as his profits. I ought to say in this connection that the cost to which the percentage is to be added, is supposed to be the *fair initial cost of construction*, with no allowance for the item of contractor's profit or for supervision by the company, such as a contractor would incur if the work were done by contract. This work has actually been done in various ways,

sometimes by a contractor, or under a construction contract, and sometimes by the company.

646 Q. And suppose there be no independent contractor, but the work be done directly by the company, how about the allowance?

A. I should make the same allowance.

Q. In the inception of water works construction, does the capital invested in construction become at once productive of returns?

A. No it does not.

Q. Can you say about what the average period of unproductiveness in such cases is?

A. Well before there is any return—that is to say, before the works are completed and ready for operation, I think there is an averaged period of about one year required in building such a plant of this magnitude, or in making large improvements upon it. I have assumed therefore that upon the average all the capital required in construction is idle perhaps one half the year or six months, and for that period I have made an allowance of 3% as the interest expense on the capital invested during the period of construction.

Q. Can you say whether or not such an allowance is according to the opinion and usage of men expert in such matters?

A. It is, yes sir.

Q. Please state Mr. Wheeler what the aggregate allowance made in your estimate for engineering for contractor's services and for interest on capital during construction is?

A. The allowance that I have used is 20%; the sum of the various percentages to which I have just testified in detail is 21%.

Q. You have testified above in regard to an allowance to water companies in cases of this kind for creating a live and going plant—the element of investment value known as the "going con-

647 cern." I will ask you at this point to state what allowance, if any you have made in your estimate on that account and your reasons for making it—that is for concluding that that is a proper allowance and amount?

A. As I testified yesterday the consideration of the value of what is known as the "going concern" consists of the difference in value and the difference in cost between a plant that had attained to an established business and identically the same kind of a plant in the same place that has just been completed and has yet to build up its business. That value consists chiefly in the fact that the owner of the plant with the going value starts out at once with an income affording a return upon the capital invested in it, while the owner of plant which is at the beginning of its operation has not that return—has a business that is small at the beginning, and increases rapidly. The going value of the established plant consists very largely of the excess of its net income during a certain period with the business established above the income which would be obtained during the same period upon starting anew in the business. Or in other words, it is substantially equivalent to a deficiency account—to the summation of the deficiency of earnings in the first years of business to provide for a fair return on the capital invested therein.

It is in a sense comparable with the allowance of interest during the year of construction before the plant is ready to operate. I consider 15% of the construction cost a conservative valuation of the going concern. It is also a conservative valuation or summation of the arrears of interest which such a property would afford
648 during the period of the development of its business to provide a fair return upon the capital invested therein. That is, upon the assumption of course, that the investors are to have rates such as to provide a fair return upon the capital from the inception of the enterorise onward. This allowance of 15% is based upon my analysis of the experience of numerous other water works plants in going through the period of business developement. I have also compared it with the awards and findings that have been made both by agreement and by arbitration, and it is within the average results of such findings or agreements as well as of the conclusions which I draw from experience in the cases to which I referred.

Q. Mr. Wheeler were you a witness in the Newburyport or Gloucester, Mass., cases?

A. Yes sir, I was in the Gloucester case. I was employed in the Newburyport case prior to the appraisal, but at the hearing for the appraisal I was not engaged.

Q. For general administration services, expenses not compensated in salaries or charged to operation and other similar matters, should any allowance be made in addition to those you have mentioned?

A. I think they should.

Q. Have you made such an allowance in your analysis?

A. I have.

Q. Of what?

A. I made an allowance of 5% upon the construction cost to cover the general administration, expenses and services of the management of the company, not entering into pay rolls or construction account, legal services, litigation, charter, franchise charges and general contingencies of that class—construction contingencies not operating contingencies.

649 Q. Please distinguish these charges as clearly as you can from the others you have referred to, and explain to the court as clearly and concisely as you can the reason for allowing them?

A. Well first under the head of general administration services would come the services and expenses of the directors, president and treasurer of the company, and its office expenses during the period of construction for which no allowance has been made in that portion of the estimate which I have already given. Legal services and litigation involved with reference to acquirement of real-estate or rights, the taking of and settlement for such property, also with reference to obtaining charters and *franchise* and negotiating contracts, these are necessary elements of construction cost for which no allowance has been made in the estimate to which I have so far testified, and that refers of course not only to such services as were required upon the original construction and inception of the works, but also to such further services of the same kinds growing out of additions to the property, acquirement of other properties and the extension of the

works on construction account down to the time of this inquiry. 5% I consider as a conservative allowance for these items not necessarily to be considered as actually having been paid out in cash, but that are involved more or less in the services of the president and officers of the company and which should be compensated in some way: Likewise for the negotiation of contracts on construction account, somebody has to do it, and there is no allowance in here for that sort of expense or service.

650 Q. What is the aggregate of the amount resulting from your allowance 6% for engineering service, 12% for contractors service, etc., 3% for interest on capital during construction, 15% for the going concern, and 5% for the matters last testified about?

A. The percentages for engineering, the contractor's services and interest on capital during construction aggregating 21% but taken as 20%, are included in the sum of $711,379.51 to which I have already testified. The additional allowance of 15% for the going concern, and 5% for administration and miscellaneous expenses just testified to, making 20% of $711,379.51, makes an addition of $142,275.90, making the total cost incurred in construction of the physical plant and in administering construction and contingencies to March 31st, 1901, $853,655.41.

Q. What do you consider then a fair estimate of the total cost of the physical plant and property on March 31st, 1901?

A. Barring a few minor items not yet alluded to $853,655.41.

Q. In your testimony yesterday you referred to allowance on amounts expended as discounts, commissions and brokerage necessary to secure the requisite funds and in renewals thereof. Is the amount of such allowance stated anywhere in your deposition or included in your analysis of the property.

A. It is not.

Q. Is such an allowance proper?

A. I think it is both proper and necessary.

Q. Please state to the court why you regard it as proper
651 and necessary.

A. Well I should repeat as to that what I said yesterday. I amplified that yesterday pretty fully did I not?

Q. Then you may pass from that question if your answer on yesterday is all you desire to say, on the subject. What is the amount in dollars and cents, if you are prepared to say that should be allowed in this case on that account?

A. $107,104.65.

Q. Passing from that question for the present, I will ask you if there is another item of allowance which in your judgment should be made, which is not covered by your deposition up to this point, or included in your estimates of depreciation to be presented hereafter?

A. There is an item of $11028.64, which should be included in the capital account as of March 31st, 1901 which added to $853,655.41, makes a total of $864,684.05 to be raised or funded in securities.

Q. What does that item of $11,028.64 represent?

A. It represents the interest accumulation upon the construction cost of certain portions of the plant that became disused prior to March 31st, 1901; that is of certain portions of the plant, the depreciation of which became complete before that date, the original cost of which however had to remain in the investment—there were no means of refunding that cost out of earnings, and it represented that additional amount of capital which had to be raised to carry the property down to March 31st, 1901. It is an accumulation of interest on the additional capital that had to be put into the property
652 by virtue of the insufficiency of earnings from rates to refund that capital when the portions of the property which it represented had to be discontinued, or go out of service.

Q. Should that sum be added you say to the $853,655.41?

A. Yes sir.

Q. Is that sum of $11,028.64 a part of the depreciation account in one sense?

A. Yes sir, it is the interest on depreciation which is in the nature of a deficiency yet to be made up out of future earnings, or else to remain permanently in capital account; it is to be disposed of one way or the other.

Q. Have you made an analysis and classification of the properties of the Knoxville Water Company for purposes of showing the depreciation of the same?

A. I have.

Q. Have you prepared a statement or table showing total depreciation to the date of the passage of the contested Ordinance, March 30th, 1901?

A. I have.

Q. I will ask you to file the same with the Stenographer marked Exhibit #1 to your deposition?

A. I herewith file the same as Exhibit #1 as requested. (p. 166-H).

Q. As explaining your methods in reaching these results, I will ask you if you made any allowance for depreciation on real estate as it stood in the original works to and including the works of 1901?

A. I did not.

Q. Why?

A. Because I considered that its value as real estate, or the value of the property without improvements, is as great to-day as that at which it is included in this estimate.

653 Q. I will ask you now to set out in detail a full itemized statement, showing as fully as is proper the different items of property owned by the Knoxville Water Company, and the depreciation upon each item, together with any tabulations that you may have made to illustrate your method and conclusions?

A. It is as follows (p. 129 to 166-H):

Depreciation of Plant.

The various parts of the entire plant and works are identified hereunder by the use of the same numerals and paragraph designations by which they are indicated in the foregoing valuation and classification.

Depreciation "I"

On Original Works to and Including the Year 1891.

1. Real Estate, Original total (p. 23)..... (No depreciation accounted.)		$11,650.00
2. Plant and improvements at River station:		
A. Engine house and pit, original total (p. 25).....		9,730.00
Depreciation:		
(*a*) Below ground line:		
"Walls of engine pit, about ⅓ torn down and replaced with improved construction in 1900	$450.00	
Foundations of building, about ½ taken out or abandoned in 1894.....	337.50	
"Suction pipe tunnel" about ½ abandoned 1894 and ½ in 1900.....	770.00	
Cement floor abandoned in 1900.....	122.50	
Wooden floor " " "	40.00	
Spiral stairs about 1/5 abandoned in 1900, balance used elsewhere.....	50.00	
	$1770.00	
654	$1,770.00	$9,730.00
64.		
(*b*) Above ground line:		
"75 M. Brick" 55% taken down in the reconstruction of 1895.....	536.25	
"10 window sills" 4 taken out 1895...	16.00	
"10 large windows" 4 " " and "2 circular windows 1 " " 1895...	45.00	
"1 Door and frame" taken out 1895.....	12.00	
"Roofing" etc. balance of item taken down 1895, except 750 feet B. M. of framing 10 and slate used elsewhere, 20.....	792.70	
	$1401.95	
Sum of (*a*) and (*b*).....	$3171.95	
Plus 20%	634.39	

Depreciation which has culminated and become complete, by discontinuance and replacement.....	$3,806.34
Leaving a balance, on which depreciation is going, on but is not yet complete	$5,923.66
Of the depreciation that is complete.....	3,806.34

The annual *rate* of such depreciation is determined by the useful life of such portions of the replaced plant respectively. Assuming them to have been constructed and the cost value thereof to have been invested as of the average date of March 31, 1893, then the *average* life of such replaced portions is found approximately as follows:

$450.00 at 16.5 years=.....	$7,425.00
$337.50 at 12.0 years=.....	4,050.00
$770.00 at 12.0 years=.....	4,620.00
2	
$770.00 at 16.5 years=.....	6,352.50
2	
655	
$122.50 $ 40.00 at 16.5 years.....	3,506.25
$ 50.00	
1401.95 at 12.0 years.....	16,823.40
–3,171.95 at 13.49 (say 13½) years.....	$42,777.15

The rate of depreciation is represented by the fixed percentage or annuity that would have to be set apart and invested each year at a given rate of interest, to create and provide a fund sufficient to redeem the original investment at the end of a stated time, or to cover the depreciation of any given plant or portion thereof at the end of its usefulness or life.

Assuming four and one half per-cent. to be a fair average rate of interest on the investments of such a fund, the annual contribution that would be necessary to refund the principal in 13½ years would be about 5.56 per-cent., say 5.5 per-cent. Five and five-tenths per-cent., therefore, represents the actual rate of the complete depreciation that had accrued on that part of the plant under "A," having a cost value of $3,806.34,—that had been replaced at the end of an average period of 13½ years from March 31, 1883,—that is to say, Sept. 30th, 1896.

Since the revenues afforded nothing for such a fund the amount of such depreciation has continued as a deficiency during the succeeding 4½ years, up to the date of this inquiry, March 31 1891, (and was then awaiting satisfaction or redemption out of earnings) thereby increasing the actual amount which the Company meanwhile had to borrow for its construction account to the extent of the

accrued amount of said sum of $3,806.34, put at compound interest for said period for 4½ years.

The average rate of interest which the Company actually
656 paid and was compelled to pay during said period on all its bonds, notes and other securities for moneys put into its plant, was probably more than 6 per-cent. Hence 6% is adopted as the fair rate to be allowed upon the said deficiency for 4½ years, making the accrued amount thereof to March 31st, 1901, $3,806.34 x 1.29080= $4,947.48. For the balance of the original plant and investment under A, I consider and assume its probable average life to be not more than 30 years, which, with an investment rate of 4½ per cent., would require an annual contribution of 1.639 per hundred, or say 1.625 per cent. of the cost of the work, or of the fund that would have to be provided.

1.625% is therefore assumed to be a fair rate of depreciation to allow on the balance of item A, remaining in the plant March 31, 1901, having a cost value of $5,923.66.

The amount of such depreciation, accruing after the 18 years from March 31, 1883, to March 31st, 1901, and in arrears at the last mentioned date, would be equivalent to $5,923.66 x $\frac{1,625}{100}$ annually invested at 4½%.

It is assumed that each annual contribution is made and invested at the end of its respective year, thus making 18 contributuons, the first of which is invested and earns interest 17 years, and the last of which earns no interest.

Under this assumption the depreciation would be:

$5,923.66 x .01625 x (25.85509 x 1.00)=.....	$2,585.06
Add amount of deficiency of depreciation account on replaced part of item A to March 31, 1901.....	4,947.48
657 Total depreciation, account of Item A accrued to March 31, 1901.....	$7,532.54
B. Boiler House, Original total, (p. 26).....	1,060.44

The depreciation on this item culminated and became complete by disuse and replacement in the summer of 1895,—say as of March 21, 1896, making its actual life 13 years, and rate of annual depreciation on a 4½% investment rate, about 5.8 per cent.

The amount of such complete depreciation, $1,060.44, has also continued as a deficiency during the succeeding 5 years to March 31, 1901,—awaiting repayment or redemption out of earnings,—thus making the accumulated or accrued deficiency on the latter date, $1,060.44 x 1.33823—..... $1,419.11

C. Tool and Storage house. Original total, (p. 26).... 161.40

Depreciation on this item became complete by disuse and replacement in December, 1900,—say as of March 31, 1901, the date of this inquiry, making its actual life 18 years and allowance for annual depreciation, on 4½% investment rate, 3.724 or about 3.7 per cent.

Amount of accrued depreciation M'c'h 31, 1901 is therefore	$161.40
D. Chimney Stack, Original total, (p. 27).....	$2238.74
Depreciation on this item became complete by disuse and replacement (with Blower and induced draft apparatus) in February, 1901, less salvage represented by the net value of the old iron after allowing for taking down, estimate at.....	75.00
Making net depreciation as of March 31, 1901.....	2,163.74

(The useful life of this part of the plant was therefore
658 about 18 years, making the allowance for depreciation on 4½% investment rate, about 3.7%.)

E–*a*. Coal Chute, Original total, (p. 27).....	$543.31
Depreciation on this item became complete by disuse and replacement in the autumn of 1895,—say as of March 31, 1896, less the value of the iron, some of which was used in the new chute and charged therein (p. 63 hereof) at	315.00
Making the net depreciation as of March 31, 1896.....	$227.31

(This is equivalent to a depreciation of $\frac{227.31}{543.31} = 41.83\%$ of the original 100% of investment, in 13 years,—41.83% of 5.827=2.44% at an investment rate of 4½%.)

The accumulation to March 31, 1901, of an accrued depreciation of $227.31 as of March 31, 1896, compounded at 6% would amount to $227.31 x 1.33823—	304.19
F. and F'. Store House and Fence, Original total, (p. 28)	$289.80

The depreciation on these items became complete by disuse and removal, with no salvage, about February 1899,—say as of March 31, 1899.

The accumulation thereof at 6% compound interest to March 31, 1901—289.80 x 1.12360=.....	$325.62

G. Pumping Machinery and Appurtenances:

(*a*) Davidson Pumping Machinery,	(p. 29).....	$13,200.00
(*b*) Foundations for same,	(" ").....	1,500.00
(*c*) Connections for same	(" ").....	2,443.51
Original total on (*a*) (*b*) and (*c*) (p. 30).....		$17,143.51

Depreciation on these three items became complete by disuse and replacement during the autumn of 1900, less such salvage in offset as is represented by the following:

659 1 Direct acting air pump used for pump well $100.00
4 Cast Iron I beams used to support Blower... 85.00
About 35,000 lbs. C. I pipe at 1¢..... 350.00
5–8″ specials and 2–″ valves..... 60.00
And the fair value of the rest of the machinery and fittings as old junk—say..... 500.00
1095.00

Making net depreciation on items (*a*) (*b*) and (*c*) of March 31, 1901 ..... $16,048.51

(This is equivalent to a depreciation of $\frac{16,048.51}{17,143.51} = 93.61\%$ of the original cost in 18 years,—93.61% of 3.724—3.49% at an investment rate of 4½%.)

(*d*–1) 2 Original Boilers and Appurtenances, Original total, (p. 31) $3,042.00

Depreciation on this item became total by disuse and replacement during the summer of 1895, less salvage substantially as follows:

Old boiler sold, netting..... $145.00
Brick from old setting, estimated..... 75.00
Steam and feed water connections, — ½..... 225.00
445.00

Making net depreciation on (*d*–1) to March 31, 1896... $2,597.00

This is equivalent to a depreciation of
$\frac{2,597.00}{3,042.00} = 85.25\%$ of the whole cost in 13 years.
$= 85.24\%$ of 5.827$=$4.97% at an investment rate of 4½%.)

The accumulation to M'c'h 31, 1901, of an accrued depreciation of $2,597.00 as of M'c'h 31, 1896, compounded at 6%, would amount to $2,597.00 x
660 1.33823= $3,475.38

(*d*–2) 2 Additional boilers and appurtenances, set in 1889,—say as of M'c'h 31, 1890. Original total, (p. 31) 2,982.00

Depreciation on this item became total by disuse and replacement in January 1901, less salvage substantially as follows:

Old boilers sold to net..... $400.00
Brick from old setting, estimated..... 75.00
Steam and feed water connections, 6/10..... 210.00
685.00

Making net depreciation on (*d*–2) to—M'c'h 31, 1901.. $2,297.00

(This is equivalent to a depreciation of

$\frac{2,297.00}{2,982.00}$ = 77.03% of the whole cost in 11 years,

= 77.03% of 7.224=5.57% at an investment rate of 4½%.)

3. *Reservoir, East Knoxville.* Original total..... $33,000.00

NOTE: The causes or sources of depreciation in a reservoir like this, constructed mainly of earthwork and masonry include- in a small degree only, wear or deterioration resulting from use or from natural causes, but comprise and chiefly result from ultimate changes in plan of works, and consequent disuse or abandonment, wholly or in part, of the structure in its present form and location, growing out of the necessity of adapting the works from time to time to changing conditions of the ultimate termination of contract and franchise privileges and obligations, the increasing requirements of growth in population and in use of water, the needs of greater capacity; also of higher pressure than the reservoir will afford, possible changes in source of supply and plan of distribution and operation either on economic or sanitary considerations, or both.

Taking all these considerations into account, and the large and increasing area within the growing limits of the city, that
661 are, or may under future conditions be too high to receive satisfactory pressure from this reservoir, its useful life is assumed to be from 30 to 40 years.

Adopting 1.25% as a fair allowance,—corresponding to a period of about 35 years, at an investment rate of 4½% the amount of accrued depreciation or of the depreciation fund to be provided out of income for the 18 years ending March 31, 1901, would be,

$33,000.00 x .0125 x (25.85509 + 1.00)=..... $11,077.72

4. Distribution Pipes and Appurtenances:

A. Original construction to 1884, total, (p. 33)..... $63,093.12

The average date of this construction and investment is assumed to be March 31, 1883.

B. Additional construction to Dec. 31, 1891,—total, (p. 34) 77,009.56

$140,102.68

The average date of this additional construction and investment is taken to be July 31, 1887; Whence the average date of the total construction investment under A. and B., would be substantially as follows:

140,102.68 is to 63,093.12 as (4¼ x 365) 1582 days is to 712 days. And 712 days prior to July 31, 1887, would be about August 1st, 1885.

I adopt as the average date of such total construction investment, the middle of the fiscal year period as it has been since 1892, since which time most of the removals and replacements of such pipe have been made. The average date of the removals and replacements of

each fiscal year being likewise fixed as of the middle of each year, respectively, the depreciation period or life of such removed or replaced pipe will appear in each case as a whole number of
662 years.

The depreciation that had accrued March 31, 1901, by disuse and replacement under said items A. and B. comprised the original invested value of the following pipes and appurtenances taken up each year, respectively, less the salvage that has been accounted and allowed thereon in the foregoing statement of such removals.

Taken up, as of the middle of the fiscal year ending March, 31, 1893:

(p. 38)	208	ft. 12″	pipe at	(cost price p. 32)	1.80	....	$374.40
	66	" 6″	" "	"	.79	....	52.14
	669.9	" 4″	" "	"	.51	....	341.65
	1,874	" 2″	" "	(cost price p. 33)	.26	....	487.24
(p.—)	330	" 1″	" "	"	.15	....	49.50
(p.—)	5 Fire Hydrants			(cost p. 32)	45.00	.....	225.00
	1 12″ Valve,			" " 32	41.00	.....	41.00
	1 2″ "			" " 34	3.00	.....	3.00
(p.—)	2 Valve boxes,			" " 34	2.50	.....	5.00
.447 lin. ft. macadam (cost p. 32) at					.06	.....	28.32
							$1,607.25
Add 20%						.....	321.45
							$1,928.70
Less salvage thereon as per sundry items, p. 38						.....	430.32

Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30, 1892..... $1,498.38

The accumulation to M'c'h 31, 1901, of an accrued depreciation of $1,498.38 as of Sep. 30, 1892, 8½ years, compounded annually at 6% would amount to $1,498.38 x 1.64097=..... $2,458.80

663 Taken up as of the middle of the fiscal year ending March 31, 1894.

(pp. 41–42)	6″		362.1 ft. at	.79	.....	$286.06
	4″		543.2 " "	.51	.....	277.03
	3″	(W. I.)	20.3 ft. "	.39	.....	7.92
	2″	"	1,543.4 " "	.26	.....	401.28
&	2″	"	319.2 " "	.26	.....	82.99
	1½″	"	624.5 " "	.22	.....	357.39
	1¼″	"	75.7 " "	.19	.....	14.38
	1″		443.9 " "	.15	.....	66.59
	1″		167.8 " "	.15	.....	25.17
	¾″		183.9 " "	.11	.....	20.23
	¾″		39.0 " "	.11	.....	4.29
	½″		116.0 " "	.10	.....	11.60
	1 Fire Hydrant				.....	45.00

Valves:

1 6"	15.25
6 4" at 10.50	63.00
1 3"	6.50
5 x 1 6 2" at 3.00	18.00
2 1½" stopcocks at 2.40	4.80
1 1¼" "	1.75
1 1" "	1.20
3 ¾" " at .75	2.25
20 x 1 21 Valve Boxes at 2.50	52.50
453 lin. ft. of macadam at .06	27.18
	$1,792.36
Add 20%	358.47
	$2,150.83

664

Forward $2,150.83

Less Salvage thereon as follows:

Sundry items, p. 42	$335.20	
" " p. 43	5.00	
		340.20

Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1893 ..... 1,810.63

The accumulation to M'ch 31st, 1901 of an accrued depreciation of $1,810.63 as of Sept. 30th, 1893 (7½ years) compounded at 6% would amount to $1,810.63 x 1.54808.= 2,803.00

Taken up during the year ending M'c'h 31st, 1895, p. 49.

8" 24 ft. at .98	$23.52
6" 2,301.9 ft. at .79	1,818.50
4" 1,171.1 " " .51	597.26
2" (W. I.) 1,742.0 ft. at .26	452.92
1½" (W. I.) 428.8 ft. at .22	94.34
1¼" " 824.1 ft. at .19	156.58
1" " 162.0 " .15	24.30
¾" " 559.0 " .11	61.49
9 Fire hydrants at $45.00	405.00

Pipe valves and stop cocks:

6" 4 at 15.25	61.50
4" 2 " 10.50	21.00
2" 6 " 3.00	18.00
1½" 1	2.40
1" 1	1.20

14 valve boxes at 2.50	35.00	
1748 ft. macadam at .06	104.88	
		$3,677.39
Add 20%		775.48
		$4,652.87
665		$4,652.87
Less salvage thereon as per sundry items p. 49		837.70
Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1894		$3,815.17
The accumulation to March 31st, 1901 (6½ years) compounded at 6% would amount to $3,815.17 x 1.46046=		$5,571.90

Taken up during the year ending March 31st, 1896, p. 66.

4" pipe	308.3 ft.	at $ .51	$157.23	
3½" (W. I.)	100.0	" .45	45.00	
3" "	48.0	" .39	18.72	
2" "	565.3	" .26	146.96	
1½" "	61.0	" .22	13.42	
1¼" "	253.4	" .19	48.15	
1" "	893.0	" .15	133.95	
¾" "	880.1	" .11	96.81	
½" "	288.0	" .10	28.80	
1 fire hydrant			45.00	
Valves and stop cocks:				
2 4" at $10.50			21.00	
2 2" " 3.00			6.00	
1 1¼" " 1.75			1.75	
2 1" " 1.20			2.40	
5 ¾" " .75			3.75	
1 ½" " .55			.55	
13 valve boxes at $2.50			32.50	
154 ft. macadam at 6 cts.			9.24	
				$811.25
Add 20%				162.25
				$973.50
666				
Forward				$973.50
Less salvage thereon as per sundry items, as per p. 66				114.65
Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1895				$853.85
The accumulation to March 31, 1901 of an accrued depreciation of $858.85 as of Sept. 30th, 1895, (5½ years) compounded annually at 6%, would amount to $858.85 x 1.37779=				$1,183.31

Taken up during the year ending March 31, 1897, p. (69).

1 ½" (W. I.)	30 ft. at .22	$6.60	
1 ¼" "	610.5 " .19	116.00	
¾" "	409.0 " .11	44.99	
Valves and stop cocks:			
1 1½"		2.40	
2 ¾"	.75	1.50	
3 valve boxes,	2.50	7.50	
			$178.99
Add 20%			35.80
			$214.79
Less salvage thereon as per sundry items, p. (69)			12.70
Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1896			$202.09
The accumulation to March 31st, 1901 of an accrued depreciation of $202.09 as of Sept. 30th, 1896, (4½ years) compounded annually at 6% would amount to $202.09 x 1.299.80 equal			$262.68

667 Taken up during the year ending March 31st, 1898, (p. 73).

2" (W. I.)	31.6 ft. at .26	$8.22	
1¼" "	17.5 " .19	3.33	
1" "	207.0 " .15	31.05	
Valves and stop cocks:			
1 14" valve		68.00	
1 valve box		2.50	
			$113.10
Add 20%			22.62
			$135.72
Less salvage thereon as per sundry items (p. 73)			56.50
Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1897			$79.22
The accumulation to March 31, 1891 of an accrued depreciation of $79.22 as of Sept. 30th, 1897, (3½ years) compounded annually at 6% would amount to $79.22 x 1.22623=			$97.14

Taken up during the year ending March 31–1899 p. 76.

6" 9 ft. at .79		$7.11
2" (W. I.)	468.4 ft. at .26	121.78
¾" "	397.0 " .11	43.67
½" "	291.0 " .10	29.10
1 fire hydrant		45.00

	Valves and stop cocks:		
1	6″ valve	15.25	
2	2″ valve at $3.00	6.00	
1	¾″ valve 75 cents;	.75	
	4 valve boxes at $2.50	10.00	
668	5 ft. macadam replaced at 6 cents	.30	cts.
			$278.96
	Add 20%		55.79
			$334.75
	Less salvage there as per sundry items, (p. 76)		55.36
	Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1898		$279.39
	The accumulation to March 31, 1901, of an accrued depreciation of $279.39 as of Sept. 30th, 1898, (2½ years) compounded annually at six per-cent., would amount to $279.39 x 1.15682=		323.20
	Taken up during the year ending March 31, 1900, (p. 81).		
	6″ 105.0 ft. at 79 cts.	$82.95	
	4″ 1930 ft. at 51 “	984.30	
	3″ (W. I.) 102.0 ft. at .39	39.78	
	2″ “ 4680.4 “ .26	1216.90	
	1½″ “ 3021.5 “ .22	664.73	
	1¼″ “ 1195.0 “ .19	227.05	
	1″ “ 697.5 “ .15	104.63	
	¾″ “ 1504.8 “ .11	110.53	
	½″ “ 317.0 “ .10	31.70	
	Fire hydrant, 3 at $45.00	135.00	
	Valve- and stop cocks:		
2	4″ valves at $10.50	21.00	
1	3″ valve	6.50	
5	2″ valves 3.00	15.00	
	Stop cocks:		
4	1½″ stop cocks at 2.40	9.60	
2	1¼″ “ “ 1.75	3.50	
1	1″ “ “ 1.30	1.20	
2	¾″ “ “ .75	1.50	
1	½″ “ “ .55	.55	
	18 valve boxes, 2.50	45.00	
	1018 ft. of macadam at 6 cts.	61.08	
			$3762.50
669	Add 20%		752.50
			$4515.00
	Less salvage thereon, as per sundry items, (p. 81)		551.80

Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1899			$3963.20
The accumulation to March 31, 1901, and accrued depreciation of $3,963.20 as of Sept. 30th, 1899, (1½ years) compounded annually at 6% would amount to $3,963.20 x 1.091.34=			$4325.20
Taken up during the year ending March 31, 1901, (p. 97).			
16"	24.7 ft. at	$2.81	$69.41
10"	4.3 "	1.37	5.89
6"	1924.5 "	.79	1520.36
4"	3099.0 "	.51	1580.49
3"	224.6 "	.39	87.59
1½"	328.0 ft.	.22	72.16
1¼"	84.0 "	.19	15.96
1"	370.7 "	.15	55.61
¾"	365.0 "	.11	40.15
7 fire hydrants, at $45.00			315.00
Valves and stop cocks:			
2 16" valves, $82.50			165.00
1 14" valve		68.00	68.00
2 10" "		32.25	64.50
	2 6" valves at	15.25	30.50
670	2 4" valves at	$10.50	21.00
	1 3" valve		6.50
1 2"	"		3.00
1 1¼" stop cock			1.75
12 valves boxes at $2.50			30.00
2639 ft. macadam at 6 cents			158.34
			$4311.21
Add 20%			862.24
			$5,173.45
Less salvage thereon as per sundry items (page 97)			1,617.00
Net depreciation which had culminated and become complete by discontinuance and replacement on average date of Sept. 30th, 1900			3,556.45
The accumulation to March 31, 1901, of an accrued depreciation of $3,556.45 as of Sept. 30, 1900, at 6% would amount to $3,556.45 x 1.03=			3,663.14

671 The *useful life of* the several quantities of pipe and appurtenances discontinued or replaced as above, from year to year; the *net depreciation* thereon respectively; and the *average annual depreciation* of the total quantity of such pipe and appurtenances are as follows:

Average life periods. From Sept. 30, 1885 to	No. yrs.	Depreciation. Gross. 100%	Depreciation. Net. Amount.	Corresponding annual Depreciation. Percent of original cost.	Corresponding annual Depreciation. Invested at 4½%.
(1)	(2)	(3)	(4)	(5)	(6)
Sept. 30, 1892.....	7 yrs.	1928.70	1498.38	77.68	9.68 per ct.
" 1893.....	8 "	2150.83	1810.63	84.18	8.97 "
" 1894.....	9 "	4652.87	3815.17	81.91	7.58 "
" 1895.....	10 "	973.50	858.85	88.22	7.19 "
" 1896.....	11 "	214.79	202.09	94.08	6.80 "
" 1897.....	12 "	135.72	79.22	58.37	3.77 "
" 1898.....	13 "	334 75	279.39	83.46	4.86 "
" 1899.....	14 "	4515.00	3963.20	87.78	4.64 "
" 1900.....	15 "	5173.45	3556.45	68.74	3.31 "
Totals and averages say.....	11.53 or 11½ years,	20079.61	16063.38	80.00	6.07 "

672 (NOTE.)—The foregoing average footings are derives as follows:—

Column 2, Average number of years multiply each item in Column (3) (2) three by that in column two and divide the sum of the products so obtained by the sum of the multiplicands, to get the average value of the multipliers to wit:—of number of years:—

Column 6, Average per-centage of annual depreciation: Multiply (6) each item in Column 3 by that in column six, and divided the sum of the product so obtained by the sum of the multiplicands to get the average value of the multiplier, to wit: per-centage of annual depreciation.

The several values in Column 6 are derived by applying the per-(5) centages of net depreciation, column 5, to the annuity required to redeem $100 *Dollars* in the number of years stated in column 2 at an investment rate of 4½%.

It appears from the foregoing summary of "Useful life" and "net depreciation" that of a total original cost of cast iron pipe and appurtenances, laid to Dec. 31st. 1891 amounting to (page 137)..... $140,102.68

the *net* depreciation that had culminated thereon solely by discontinuance and replacement was..... 16,063.38

equivalent to $\frac{16,063.38 \times 100}{140,102.68} = 11.47$ per cent.

And that the average useful life of that part of the plant so discontinued and replaced was 11.53 years, making the annual rate of depreciation on all said pipe and appurtenances laid *before* Dec. 31 1891, from said causes, (but excluding the depreciation caused by and accruing from natural deterioration of materials, "wear and tear" electrolysis etc.) $\frac{11.47}{11.53} - .995$,—say) 1 per cent. Allowing

673 in addition thereto, for the constant but incomplete depreciation caused by deterioration of all kinds and by all other causes, corresponding to an *average* life of 38 years on a 4½ per cent. basis, an equal allowance of... 1 per cent.

would make a total depreciation of..... 2 per cent.
Which is adopted for and applied to all said pipes and appurtenances laid *before* Dec. 31 1891, so long as they shall remain in use.

For those pipes and their appurtenances, planned, laid and constructed after Dec. 31, 1891, when the larger growth of the community was apparent and its future requirements for water supply better established and known and of which, therefore, relatively less of replacement, discontinuance and substitution will be required,—it is considered that the total depreciation thereon will be not less than 1%, on the construction cost of such portions thereof as shall be in use from time to time.

At an investment rate of 4½% this corresponds to an *average useful life* of about 38 years,—and to the actual useful life of different portions thereof, from say 10 to 70 years, according to the various conditions and uses thereof.

Assuming that all of the pipes and appurtenances taken up and discontinued to March 31st. 1901, are a portion of those laid prior to Dec. 31st. 1891, (which assumption is correct, except as to about 937 feet in the Knoxville plant proper, and 1458 feet in the Lonsdale Beaumont plant).

I find that the cost of the pipe and appurtenances as laid to Dec. 31st. 1891 less cost of pipes and appurtenances discontinued and replaced is as follows:—

674 Original cost p. (pp. 33-4 also 137)..... $140,102.68

Taken up during the year ending Mch. 31,			1893 (p. 138)	$1,928.70
"	"	"	1894 (" 138)	2,150.83
"	"	"	1895 (" 138)	4,652.87
"	"	"	1896 (" 138)	973.50
"	"	"	1897 (" 138)	214.79
"	"	"	1898 (" 138)	135.72
"	"	"	1899 (" 138)	334.75
"	"	"	1900 (" 138)	4,515.00
"	"	"	1901 (" 138)	5,173.45

Total cost value of pipes and appurtenances, replaced $20,079.61

Leaves net cost of pipes and appurtenances as laid to Dec. 31 1891, and as existing March 31, 1901..... $120,023.07

Upon which sum, the foregoing allowance of 1% for annual depreciation remains to be allowed from the average date of construction, Sept. 30th. 1885, to March 31, 1901, equals 15½ years, accounted as invested at 4½% compounded annually.

Assume each year's depreciation allowance of 1% of the construction cost, to be accounted as properly to have been invested at the end of each fiscal year after the year of construction or of *"average"* construction, then the arrears of the depreciation fund, or the amount of accrued depreciation on the balance of such pipe and appurtenances would be

$120,023.07 x .01 x (19.78406 + 1.00)=..... $24,945.67

675 5. *Service pipes and appurtenances.*

Assumed to have been laid originally without direct expense to the Company, but kept in repair and renewed from time to time by it, thus involving maintenances and depreciation, but *not interest charges.*

Although since 1899 renewals of service pipes have been charged to *"maintenance"* yet in view of the fact that the number of service pipes whose life has been reached is still comparatively small, and that new services are being laid in increasing numbers it becomes necessary and proper to make future allowance therefor, in the form of either depreciation or a renewal fund.

It is considered therefore that the depreciation thereon *from March 31st. 1901,* will be 3% per annum, on the estimated original construction costs, *in excess* of the actual renewals made up to that time.

It is to be noted that this allows for *no arrears* of accrued depreciation on this item up to March 31st 1901.

It may also be said that the continual extension of paved and curbed streets and sidewalks will tend to increase the cost of service pipe renewals, and therefore constantly swell the allowance properly to be made for depreciation thereof.

6. *Meters-boxes and connections:*

Original construction cost to Dec. 31 1891 (page 35).... $1,696.20

The meters, boxes, etc. referred to in this analysis comprise such only as were furnished and installed by, and at the expense of the Company.

676 (Those paid for by the consumer—a few only in number, are maintained at his cost and no rental is charged thereon, hence they do not enter into either side of the Company's accounts.) The current expenses of *reading, inspecting, testing, and repair of meters* and also the cost of replacement when substitution becomes necessary, are charged to *"maintenance"* while the receipts from meter rentals appear in the income and go toward the various items of current expenses above.

Assuming the average useful life of the plant under this head to be seventeen years (under ordinary management and care, it is probably less) with an investment rate of 4½%, a total annual depreciation rate of 4.04% would be required to provide for such renewals. Taking into account the fact already indicated that such depreciation is provided for in a limited degree only, by the current repair account, 2½% is assumed to be a fair and reasonable allowance, annually, reckoned from the date of the respective years of construction, for that part of the depreciation which is not provided

for in such meter repairs. Applying this to the meter construction up to 1891, having an average date of Sept. 30th. 1885, we get

$1,696.20 by .025 x (19.78406 + 1.00)..... $881.35

7. *Tools, vehicles, furniture and fixtures, etc.*

Original cost to Dec. 31, 1891, (p. 35)..... $2000.00

The average useful life of the articles and plant under this head is, in the light of my experience here and elsewhere, considered to be something less than 8 years.

Assuming it to be equal to eight years, depreciation upon this item would become complete 8 years from the average date of investment, say March 31, 1886—March 31–1894, when the accrued
677 amount of depreciation being *on the average,* complete, would amount to $2000.00. Whence the accumulated arrears of the depreciation fund for this item to March 31st. 1901 becomes

$2000.00 x 1.5363=..... $3,007.26

8. *Distribution pipes and appurtenances in North Knoxville,* constructed in 1891.

Original cost to Dec. 31st. 1891, (pages 35-36)..... $32,271.25

Applying the average annual rate of depreciation heretofore adopted (p. 149) for all pipe not discontinued or replaced, to wit, One (1%) per cent. to the time during which the depreciation has been accruing and assuming that the first contribution to the depreciation fund would properly have been made at the close of the next fiscal year thereafter,—March 31, 1893—would require eight annual contributions placed at compound interest for 8, 7, 6, 5, 4, 3, 2, and 1 year respectively, *plus* the 9th. contribution at the end of the 9th. or last year, which has earned no interest, whence the accumulated arrears of the depreciation fund becomes

$32,271.25 x .01 x (9.80211 + 1.00)=..... $3,485.98

Depreciation II.

On Additions Made During 15 Months to March 31, 1893.

Time during which depreciation has been accruing to March 31, 1901,=8 years.

4. Distribution pipes and appurtenances, (exclusive of North Knoxville) (pages 37-38)

$14,045.87 x .01 x (8.38001 plus 1.00)=..... $1,317.50

5. Service pipes and appurtenances (p. 38-39) (See page
678 151).

6. Meters, boxes and connections, (page 39)

$401.70 x .025 x (8.38001 plus 1.00)=..... $94.20

7. Tools, teams, vehicles, furniture, etc. (page 39). The average useful life being assumed at about 8 years, the annual allowance for

depreciation if invested at 4½ per cent. compounded annually would be 10.66%. I use 10% which, applied to the amount of the investment for the 15 months ending March 31, 1893 gives

$1,100. x .10 x (8.58001 plus 1.00)=..... $1,031.80

8. Distribution pipes and appurtenances in North Knoxville (page- 39-40)—

$394.32 x .01% x (8.38001 plus 1.00)=..... 36.99

Depreciation III.

On Additions Made During Year Ending March 31, 1904.

Time of depreciation accruing to March 31, 1901,—7 years.

4. Distribution pipes and appurtenances, (exclusive of North Knoxville), (page- 40-42)

$8,373.94 x .01 x (7.01915 plus 1.00)=..... $671.52

5. Service Pipes & Appurtenances (P. 42) (See P. 151).

6. Meters, boxes and connections page 42

$442.60 x .025 x (7.01915 plus $1.00)=..... 88.26

7. Tools, teams, etc. (p. 43)

$625.00 x .10 (7.01915 plus 1.00)=..... 501.20

8. Distribution pipes and appurtenances in North Knoxville (page 43)

$1,263.42 x .01 + (7.01915 x 1.00)=..... 101.32

9. High service pumping station and filter plant.

A. Building, etc. (partially completed) (page 44)

679 NOTE.—We have found that the average life of that considerable part of the river pumping station buildings, which has been discontinued and replaced to meet the growing needs of the service was 13½ years, (pages 129-131) corresponding to an annual rate of depreciation of 5.5%. We have also assumed that the probable useful life of the remaining portion of the said buildings (which comprised the most durable parts thereof) is 30 years, corresponding to an annual rate of 1.625% depreciation, invested at 4½ per cent.

The relative cost of and rates upon said portions were:

$3,806.34	at	5.5 %	=	20,934.87	at 1%
5,923.66	"	1.625%	=	9,625.95	" 1%
9,730.00				$30,569.82	

Making the average rate on the entire building

$$\frac{30,560.82}{9,730.00} = 3.18\%$$

Corresponding to an average useful life of about 20 years on a four and one-half per cent. basis.

As a conservative basis well within the foregoing average results, of our experience with the river pumping station building, I adopt as the average rate of depreciation upon the high service pumping station and filter plant building 2% which corresponds to an average life of between 26 and 27 years, on a 4½ per cent. basis. Whence, the amount of accrued depreciation, upon the construction cost of March 31, 1894,

2,745.66 x .02 x (7.01915 plus 1.00)=..... $440.36

B. Pumping machinery and appurtenances:

We found (pp. 134-136) the average annual rates of depreciation on those parts of the pumping machinery and appurtenances
680 at the river pumping station which have been discontinued and replaced to provide for the growing needs of the service were as follows:—respectively:

Davidson machinery net.....	3.49%	annually
Two original boilers, net.....	4.97%	annually
Two additional boilers, net.....	5.57%	"
Average of four boilers above.....	5.27%	"

In the light of this experience the annual rates of depreciation upon all pumping machinery and appurtenances remaining in use March 31st. 1901, reckoned from the time of their construction, is taken to be, conservatively estimated as follows:—

(*a*) (*b*) and (*c*) Pumping engines, foundations, and connections, 3% corresponding to a life of between 20 to 21 years, on a four and one-half per cent. basis.

(*d*) Boilers, settings and connections, 5% corresponding to a life of between 14 and 15 years, on a 4½% basis.

(*d*–1) (p. 44) Applying the above rate to the Manning boiler, etc., we have accrued depreciation—

$1,008.00 x .05 x (7.01915 plus 1.00)=..... $404.17

10. On stand pipe on reservoir hill, p. 45.

The *physical* life of a structure of this character as effected by deterioration alone, that is, by rust, pitting of plates, etc. depends chiefly upon the vigilance and care with which it is watched, and kept properly cleaned and painted, with protective coatings. With such care or lack of care as is too often shown, probably 20 to 30 years would be the limit of safety while with reasonably good care, 30 to 40 years' service could be safely relied upon or twice the average life of ordinary boilers constructed of similar materials.
681 Taking the above into account and also the considerations referred to on pages (136-137) as affecting the earth reservior, I adopt the same rate for depreciation, allowance as in that case to wit, 1¼% per annum, invested at 4½% compound interest,

corresponding to an average life of about 35 years. Hence the allowance for accrued depreciation to March 31–1901 would be $13,505.89 x .0125 x (7.01915 plus 1.00).. $1,353.82

Depreciation IV.

On Additions During the Year Ending March 31, 1895. (Including North Knoxville Works, Acquired Nov. 17, 1893.)

Time of depreciation accruing to March 31, 1901, 6 years.
2. On plant and improvements at river station.
A. New engine house, etc.

(*a*) Below basement floor cost to above date (page 116)	$9,700.44
Average rate of depreciation (p. 155) 2%. Whence, $9,700.44 x .02 x (5.71689 plus 1.00)=.....	$1,303.14
A. On new 24″ intake conduit, cost page 47.....	$2,622.90
Adopt for depreciation same rate as for the most permanent parts of the pumping station works, to wit, 2%, whence $2,622.90 x .02 x (5.71689 plus 1.00)=	352.35
4. On distribution pipes and appurtenances, including North Knoxville, additional construction (pages 47-49), $45,517.51 x .01 x (5.71689 plus 1.00)=..	3,057.36
6. On meters, boxes and connections, (p. 50) 682 $439.80 x .025 x 6.71089=.....	$73.85
7. On tools, teams, etc. (p. 50) $350.00 x .10 x 6.71689=.....	235.09
9. On high service pumping station filter plant.	
A. Buildings, additional cost, page- (50-59).....	12,961.92
$12,961.92 x .02 x 6.71689=.....	1,741.28
B. Pumping machinery and appurtenances (*a*) (*ab*) and (*c*) pumping engines, foundations and connections, costs, (page- 54-55).....	4,348.98
$4,348.98 x .03 x 6.71689.....	876.35
(*d*-1) Manning boiler and connections (page 55) 360.00 x .05 x (6.71689)=.....	120.90
(C) Filteration plant. Cost, (pp. 55-57).....	30,271.56

The considerations and conditions which determine the useful life of this part of the plant are very similar to those affecting the life of the pumping engines, etc. (see p. 156).

The average deterioration would be somewhat greater, however, because of the amount of wood staves, in the filter tank construction, while the need or possibility of replacement on economic and efficiency considerations is greater, by reason of the fact that filtration apparatus and processes are in an evolutionary stage and more liable to radical changes and improvements than is pumping machinery.

In view of these contingencies an annual depreciation rate of 3½% on a 4½% investment basis, is adopted, corresponding to an average life of nearly 19 years; whence $3,271.56 x .035 x 6.71689=..... $7,116.58

683 On Additions Made During Year Ending March 31, 1896.

Time of depreciation accruing to March 31, 1901 5 years.
2. On plant and improvements at river station.

A. New engine house, etc. cost to above date (pages 58-61)		$7,175.64
$7,175.64 x .02 x (4.47071 plus 1.)=		785.12
B. Boiler house. Cost to above date, (page- 61-62)		2,707.50
$2,707.50 x .02 x 5.47071=		296.24

C. Tool and storage house (p. 62). Additional cost $25.00. Depreciation on this item became complete by disuse and replacement in Dec. 1900, say as of March 31, 1901, making the amount of accrued depreciation as of that date..... 25.00

D. Chimney stack and inclined flue (p. 62), additional cost, $225.00. Depreciation on this item became complete by disuse and replacement in Feb'y 1901, say as of March 31st. 1901, making the amount of accrued depreciation as of that date 225.00

E. Coal chute with new coal shed and pocket.
That portion of this item relating to the coal shed and pocket, P. 62-63 (amounting to $774.80 plus 20%, or $893.76) while probably not of as long life as the remainder of the buildings at the pumping station, is, for the purpose of this analysis considered the same, viz: annual depreciation 2%, thus giving a depreciation on this item of $893.76 x .02 x 5.47071=..... ..... $97.79

684 On that portion of this item relating to coal chute the depreciation became complete on two-thirds of it during the year ending March 31st. 1900, and on the remaining ⅓ during the year ending March 31st. 1901, making the average date of its abandonment and disuse Nov. 30th. 1900, or say March 31st. 1901 and making the amount of such depreciation as of said date March 31st. 1901, page 62 (engineering, contractors' services etc. not included)..... $497.60
Plus 20 %..... 99.52
$597.12

G. On pumping machinery and appurtenances:

(d-3) 2. Additional boilers and appurtenances, (page-63-64) $4788.00 x .05 x 5.47071 =.....		1309.69
(e) Deane vertical comp. cond. duplex pumping engine (p. 64).....	15,810.00	
(f) Foundations for do. (page 64).....	354.12	
(g) Suction and discharge pipes (pp. 64-65).....	1,647.60	
	$17,811.72	
$17.811.72 x .03 x 5.47071 =.....		$2,923.28

4. On distribution pipes and appurtenances pages (65–66) $4,854.30 x .01 x 5.47071 = ... $265.56
5. On service pipes and appurtenances. "Net cost of services" (page 67) 900.00
Rate of depreciation allowed same as found on (page 151) to wit, 3 % per annum, on 4½ % investment basis, $900.00 x .03 x 5.47071 = ... 147.71
6. On meters, boxes, and connections (page 67), $404.10 x .025 x 5.47071 = ... 55.27
7. On tools, teams, etc. (page 67) $50.00—$50.00 x .10 x 5.47071 = ... $27.35

685 9. On high service pumping and filter plant:

A. Buildings, etc. (page 67) $132.00—$132.00 x .02 x 5.47071 = ... 14.44
D. Grading and fencing (p. 68) $1,046.40 x .02 x 5.47071 = 114.49

Depreciation VI.

On Additions Made During the Year Ending March 31st, 1897. (Including North Knoxville and Excluding L. B. Works.)

Time of depreciation accruing to March 31st, 1901, = 4 years.

2. On plant and improvements at river station:

G. (*h*) Pulsometer pump, etc. (p. 68) $258.00 x .03 x (3.27819 plus 1.00) = ... $33.11
4. On distribution pipes and appurtenances pp. — $4,026.55 x .01 x 4.27819 = ... 172.26
5. On service pipes and appurtenances (p. 68–69) $720.00 x .03 x 4.27819 = ... 92.41
6. On meters, boxes and connections (p. 70) $387.90 x .025 x 4.27819 = ... 41.48
7. On tools, teams, etc. (p. 70) $50.00 x .10 x 4.27819 = ... 21.39

9. On high service pumping station and filter plant:

B. (*d*–2) Horizontal Tubular boiler and setting (p. 70) $1,230.00 x .05 x 4.27819 = ... 263.11
C. (*a*–2) Additional filters (p. 71) $5820.00 x .035 x (*b*–2) 4.20819 = ... 871.47
D. Grading and fencing (p. 71) $18.00 x .02 x 4.27819 = ... 1.54

686 *Depreciation VII.*

On Additions Made During Year Ending March 31, 1898. (Including North Knoxville and Excluding L. B. Works.)

Time of depreciation accruing to March 31, 1901, 3 years.

2–H. Construction of Front Street, outside stairs, grading, etc. (page 72) Same rate as buildings etc. $624.00 x .02 x (2.13702 plus 1.00) = ... $39.15
4. On distribution pipes and appurtenances (pages 72–73) $2,227.84 x .01 x 3.13702) = ... 69.89

5. On service pipes and appurtenances (p. 73) $972.00 x .03 x 3.13702 = ... 91.48
6. On meters, boxes and connections (page 74), $198.00 x .025 x 3.13702 = ... 15.53
7. On tools, teams, office furniture, etc. (p. 74) $100.00 x .10 x 3.13702 = ... 31.37

Depreciation VIII.

On Additions Made During Year Ending March 31st, 1899. (Including North Knoxville Works and Excluding L. B. Works.)

Time of depreciation accruing to March 31st, 1901, 2 years.

2. On plant and improvements at river station:

G. (*i*) Suction pipe from screen well to pump pit (page 75) same as pumping engines, $60.00 x .03 x (1.045 plus 1.) = ... $3.68
3. On reservior (p. 75) $126.00 x .0125 x 2.045 = ... 3.22
4. On distributing pipes and appurtenances (pp. 75–76) $4,467.99 x .01 x 2.045 = ... 91.37
687 5. On service pipes and appurtenances (p. 77) $1,034.00 x .03 x 2.045 = ... $69.57
6. On meters, boxes and connections (p. 77) $464.70 x .025 x 2.045 = ... 23.76
7. On tools, teams, office furniture etc. (p. 77) $225.00 x .10 x 2.045 = ... 46.01

Depreciation IX.

On Additions Made During Year Ending March 31, 1900. (Including North Knoxville Works, Lonsdale Beaumont Works Accounted for Separately.)

Time of depreciation accruing to March 31st, 1901, 1 year.

1. Real estate (p. 78.):

E. No depreciation accounted.
E'. Office building and improvements, Depreciation assumed as in pumping station and filter plant buildings, to wit, 2%—$4,480.00 x .02 x 1.00 = ... $89.60

2. Plant and improvements at river station (p. —):

A. On engine house, etc. Electric lighting plant, same as buildings, (72.00 x .02 x 1.00) 1.44
E. On coal chute and wagon scales; assumed same as buildings $512.40 x .02 x 1.00 = ... $10.25
F–2. On fence around Craig Street lot (p. 79). The probable life of a fence of this description is not over 8 to 10 years, corresponding to an annual depreciation on a 4½% basis, of 10.7% to 8.1%. Assume 10% as a fair rate for a structure of this character, we have $210.00 x .10 x 1.00 = ... $21.00

G. (*j*) Pumping machinery and appurtenances (p. 79) Suction and discharge pipes, $144.00 x .03 x $1.00 = ... 4.32

688 4. On distribution pipes and appurtenances (p. 80–81) $18,628.06 x .01 x 1.00 = ... $186.28

5. On service pipes and appurtenances (p. 82) $748.80 x .03 x 1.00 = ... 22.46

6. On meters, boxes and connections (p. 82) $2,574.90 x .025 x 1.00 = ... 64.37

7. On tools, teams, office furniture, etc. (p. 82) $750.00 x .10 x $1.00 = ... 75.00

9. On high service pumping station and filter plant, (p. 082–83).

A. Buildings	$60.00	
Extension to settling basin	2341.52	
	$2401.52	
$2401.52 x .02 x 1.00 =		$48.03

Depreciation IX on Lonsdale Beaumont Works.

(Originally Constructed Between Sept., 1892, and Sept., 1893.)

1. On real estate, L. B.:

Original total, (p. 84) $3600.00

Depreciation, is assumed to have become complete by non-use and discontinuance March 31st, 1900, (actually May, 1900) in the case of the

Rights of Way	$500.00
And "water rights"	500.00
Amounting, as of March 31st. 1900, to	$1,000.00

Life, seven years. Annual rate of depreciation 4½%—

$$\frac{\$1000.00}{3600.00} \times 12.467 = 3.46\%$$

Accumulation thereof to March 31. 1901 at 6% $1,060.00

11. On improvements on real estate, L. B., exclusive of pumping station and stand pipe lots:

Original total, (pp. 84–85) $35,700.00

689 *Depreciation* is assumed to have become complete by non-use and discontinuance March 31, 1901, (actually May 1900) on the *whole* of this item, less salvage as follows:—

3500 feet more or less 12" C. I. pipe taken up at ($25. per ton, less 27c. per foot for taking up) .67 cts. including valves, etc.	$2,345.00
Making the net depreciation as of March 31, 1900	33,355.00

Life 7 years. Annual rate of depreciation at 4½ %—

$$\frac{33.355}{35.700} \times 12.467 = 11.64\ \%$$

Accumulation thereof to March 31st, 1901 at 6 %..... 35,356.30

12. On improvements, buildings, and machinery at pumping station, L. B.:

Original total (p. 85)..... 15,420.00

Depreciation became complete by non-use and discontinuance as above, March 31, 1900, on the whole of this item, less salvage as follows:—

On pumping machinery and boilers.....	$1,250.00	
Brick and materials in buildings, estimated at..	100.00	
		$1,350.00
Net depreciation March 31, 1900.....		$14,070.00

690 Life about 7 years. Annual rate of depreciation at 4½ %—

$$\frac{14.070}{15.420} \times 12.467 = 11.38\ \%$$

Accumulation to March 31st, 1901, at 6 %..... $14,914.20

13. On standpipe, L. B.:

Original total (p. 86)..... $7,680.00

Depreciation (same rate as on East Knoxville standpipe, 1¼ % annually, on 4½ per-cent. basis) accrued from March 31st. 1893 = 8 years, $7680.00 x .0125 x (8.38001 plus 1.00) =..... 900.48

14. On distribution pipes and appurtenances, including force main, L. B.:

Construction cost (p. 86–87)..... 58,963.02

Average date of all the work somewhat prior to March 31st. 1895, making the period of depreciation to be accounted for 6 years, whence, accrued depreciation to March 31st. 1901, = $58,963.02 x .01 % x (5.71689 plus 1.00) =..... 3,960.48

15. On service pipes and appurtenances, L. B.:

No depreciation until after March 31st. 1901. (See p. 87 & 151)

16. On meters, boxes, and connections, L. B.:

Construction cost (p. 88) 1,149.90

Assumed to have been expended as of an average date of March 31st. 1896, making the period of depreciation to March 31st. 1901, five years, $1,149.90 x .025 x (4.47071 plus 1.00) =..... 157.27

17. On tools, teams, etc., L. B.:

Cost, estimate (p. 88)..... 500.00

Annual average date—March 31st. 1896, making depreciation period 5 yrs. $500.00 x .10 x 5.47071 =..... 273.54

Classification of plant.	Construction cost of plant to March 31, 1901.	Depreciation accrued to March 31, 1901.				
		Complete and determined by discontinuance or replacement.			Incomplete and on plant in use, estimated by percentages.	Total depreciation.
		At time of culmination.	Accretion at 6% comp.	Total by discontinuance.		
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
1. Real Estate.						
To December 31, 1891	$11,650.00					
Year ending M'ch 31, 1891, E.	5,500.00					
Ditto E'	4,480.00	.....	.....	.....	89.60	89.60
L.-B. Plant	3,600.00	1,000.00	60.00	1,060.00	.....	1,060.00
Year ending M'ch 31, 1901	192.00					
Totals	$25,422.00	1,000.00	60.00	1,060.00	89.60	1,149.60
2. Plant and Improvements at River Station.						
A. Engine House and Pits :						
To Dec. 31, 1891	9,730.00	3,806.34	1,141.14	4,947.48	2,585.06	7,532.54
Year ending M'ch 31, 1895	9,700.44	.....	.....	.....	1,303.14	1,303.14
New Intake, ditto	2,622.90	.....	.....	.....	352.35	352.35
Year ending M'ch 31, 1896	7,175.64	.....	.....	.....	785.12	785.12
1900	72.00	.....	.....	.....	1.44	1.44
1901	3,475.01					
Totals	$32,775.99	3,806.34	1,141.14	4,947.48	5,027.11	9,974.59

2-B. Boiler House, etc.						
To Dec. 31, 1891	1,060.44	1,060.44	358.67	1,419.11	.....	1,419.11
Year ending M'ch 31, 1896	2,707.50	.....	.....	.....	296.24	296.24
1901	1,281.00					
Totals	$5,048.94	1,060.44	358.67	1,419.11	296.24	1,715.35
2-C. Tool and Storage House.						
To December 31, 1891	$161.40	161.40	.....	161.40	.....	161.40
Year ending M'ch 31, 1896	25.00	25.00	.....	25.00	.....	25.00
1901	314.16					
Totals	$500.56	186.40	.....	186.40	.....	186.40
2-D. Chimney Stack.						
To December 31, 1896	$2,238.74	2,163.74	.....	2,163.74	....	2,163.74
Year ending M'ch 31, 1896	225.00	225.00	.....	225.00	.....	225.00
Totals	$2,463.74	2,388.74	.....	2,388.74	.....	2,388.74
2-E. Coal Chute, Shed, Pocket, etc.						
To Dec. 31, 1891	$543.31	227.31	76.88	304.19	.....	304.19
Year ending M'ch 31, 1896	1,490.88	597.12	.....	597.12	97.79	694.91
1900	512.40	.....	.....	.....	10.25	10.25
Totals	$2,546.59	824.43	76.88	901.31	108.04	1,009.35
2-F. Store House and Fencing, Craig St.						
To December 31, 1891	$289.80	289.80	35.82	325.62	.....	325.62
Year ending M'ch 31, 1900	210.00	....	.....	.....	21.00	21.00
Totals	$499.80	289.80	35.82	325.62	21.00	346.62

Summary of Depreciation of Plant Accrued to March 31, 1901—Continued.

Classification of plant.	Construction cost of plant to March 31, 1901.	Depreciation accrued to March 31, 1901.				
		Complete and determined by discontinuance or replacement.			Incomplete and on plant in use, estimated by percentages.	Total depreciation.
		At time of culmination.	Accretion at 6% comp.	Total by discontinuance.		
693 (1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
2-G. Pumping Machinery, etc., Engines, Foundations, and Connections.						
(*a–b–c*) To December 31, 1891	$17,143.51	16,048 51	.....	16,048.51	.....	16,048.51
(*e–f–g*) Year ending M'ch 31, 1896	17,811.72	.....	.....	.....	2,923.28	2,923.28
(*h*) 1897	258.00	.....	.....	.....	33.11	33.11
(*i*) 1899	60.00	.....	.....	.....	3.68	3.68
(*j*) 1900	144.00	.....	.....	.....	4.32	4.32
(*k–l–m*) 1901	17,606 40					
Totals	$53,023.63	16,048.51	.....	16,048.51	2,964.39	19,012.90
2-G. Pumping Machinery, etc., Boilers and Appurtenances	$3,042.00	2,597.00	878.38	3,475 38	.....	3,475.38
(*d*-1-2) To December 31, 1891	2,982.00	2,297.00	.....	2,297.00	.....	2,297.00
(*d*-3) Year ending M'ch 31, 1896	4,788.00	.....	.....	.....	1,309.69	1,309.69
1901	7,056 00					
Totals	$17,868.00	4,894.00	878.38	5,772.38	1,309.69	7,082.07

2-H. Construction Front St. Outside Stairs & Grading.						
Year ending M'ch 31, 1898	$624 00				39.15	39.15
M'ch 31, 1901	1,094.40					
Totals	$1,718.40				39.15	39.15
2-I. Intake Tower.						
Year ending M'ch 31, 1901	$10,245.00					
3. Reservoir.						
To December 31, 1891	$33,000.00				11,077.72	11,077.72
Year ending M'ch 31, 1890	126.00				3 22	3.22
Totals	$33,126.00				11,080.94	11,080 94
694						
4. Distribution Pipes and Appurtenances.						
Knoxville:						
Original to 1884	$63,093.12	16,063.38	4,624.99	20,688.37	24,945.67	45,634 04
Additional to Dec. 31, 1891	77,009 56					
15 mos. ending M'ch 31, 1893	14,045.87				1,317.50	1,317.50
Year " " 31, 1894	8,373.94				671.52	671.52
1895	45,517.51				3,057.36	3,057.36
1896	4,854.30				265.56	265.56
1897	4,026.55				172.26	172.26
1898	2,227.84				69.89	69.89
1899	4,467.99				91.37	91.37
1900	18,628.06				186.28	186 28
1901	32,721.48					
	274,966.22	16,063.38	4,624.99	20,688.37	30,777.41	51,465.78
No. Knoxville:						
To December 31, 1891	32,271.25				3,485.98	3,485.98
15 mos. ending M'ch 31, 1894	394.32				36.99	36.99
Year ending M'ch 31, 1894	1,263.42				101.32	101 32
Lonsdale-Beaumont	58,963.02				3,960.48	3,960 48
Totals	$367,858.23	16,063.38	4,624.99	20,688.37	38,362.18	59,050.55

Summary of Depreciation of Plant Accrued to March 31, 1901—Continued.

Classification of plant.	Construction cost of plant to March 31, 1901.	Depreciation accrued to March 31, 1901.				
		Complete and determined by discontinuance or replacement.			Incomplete and on plant in use, estimated by percentages	Total depreciation.
		At time of culmination.	Accretion at 6% comp.	Total by discontinuance.		
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
5. Service Pipe & Appurtenances.						
Year ending M'ch 31, 1896	$900.00	.....	.....	.....	147.71	147.71
1897	720.00	.....	.....	.....	92 14	92.14
1898	972.00	.....	.....	.....	91.48	91.48
1899	1,134.00	.....	.....	.....	69.57	69.57
1900	748.80	.....	.....	.....	22.46	22.46
1901	4,099.20					
Totals	$8,574.00	.....	.....	.....	423.36	423.36
695						
6. Meters, Boxes, and Connections.						
To December 31, 1891	$1,696.20	.....	.....	.....	881.35	881.35
15 mos. ending M'ch 31, 1903	401.70	.....	.....	.....	94.20	94.20
Year ending M'ch 31, 1894	442.60	.....	.....	.....	88.26	88.26
1895	439.80	.....	.....	.....	73.85	73.85
1896	404.10	.....	.....	.....	55.27	55.27
1897	387.90	.....	.....	.....	41.48	41.48
1898	198.00	.....	.....	.....	15.53	15.53
1899	464.70	.....	.....	.....	23.76	23.76
1900	2,574.90	.....	.....	.....	64.37	64.37
Lonsdale-Beaumont to M'ch 31, 1900	1,149.90	.....	.....	.....	157.27	157.27

Year ending M'ch 31, 1901	682.90					
Totals	$8,842.70				1,495.34	1,495.34
7. Tools, Teams, Office Furniture, etc.						
To December 31, 1891	$2,000.00	2,000.00	1,007.26	3,007.26		3,007.26
15 mos. ending M'ch 31, 1893	1,100.00				1,031.80	1,031.80
Year ending M'ch 31, 1894	625.00				501.20	501.20
1895	350.00				235.09	235.09
1896	50.00				27.35	27.35
1897	50.00				21.39	21.39
1898	100.00				31.37	31.37
1899	225.00				46.01	46.01
1900	750.00				75.00	75.00
Lonsdale-Beaumont to M'ch 31, 1900	500.00				273.54	273.54
Year ending M'ch 31, 1901	400.00					
696 Totals	$6,150.00	2,000.00	1,007.26	3,007.26	2,242.75	5,250.01
9. High Service Pumping Station and Filter Plant.						
A. Buildings:						
Year ending M'ch 31, 1894	$2,745.66				440.36	440.36
1895	12,961.92				1,741.26	1,741.28
1896	132.00				14.44	14.44
1900	2,401.52				48.03	48.03
1901	30.00					
Totals	$18,271.10				2,244.11	2,244.11
9-B. Pumping Machinery & Appurtenances.						
(a-b-c) Engines, Foundations, & Connections:						
Year ending M'ch 31, 1895	$4,348.98				876.35	876.35
9-B. Pumping Machinery, etc.						
Boilers and Connections:						
(d-1) Year ending M'ch 31, 1894	$1,008.00				404.17	404.17
(d-1) 1895	360.00				120.90	120.90
(d-2) 1897	1,230.00				263.11	263.11
Totals	$2,598.00				788.18	788.18

Classification of plant.	Construction cost of plant to March 31, 1901.	Depreciation accrued to March 31, 1901.				
		Complete and determined by discontinuance or replacement.			Incomplete and on plant in use, estimated by percentages.	Total depreciation.
		At time of culmination.	Accretion at 6% comp.	Total by discontinuance.		
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
9-C. Filtration Plant.						
Year ending M'ch 31, 1895	$30,271.56	.....	.....	.....	7,116.58	7,116.58
1897	5,820.00	.....	.....	.....	871.47	871.47
Totals	$36,091.56	.....	.....	.....	7,988.05	7,988.05
9-D. Fencing and Grading.						
Year ending M'ch 31, 1896	$1,046.40	.....	.....	.....	114.19	114.19
1897	18.00	.....	.....	.....	1.54	1.54
1901	36.00					
Totals	$1,100.40	.....	.....	.....	115.73	115.73
10. Standpipe on Reservoir Hill.						
Year ending M'ch 31, 1895	$13,505.89	.....	.....	.....	1,353.82	1,352.82
11. Improvements on Lonsdale-Beaumont Real Estate.						
To M'ch 31, 1900	$35,700.00	33,355.00	2,001.30	35,356.30	.....	35,356.30
12. Improvements, Buildings, and Machinery at Lonsdale-Beaumont Pumping Station.						
To M'ch 31, 1900	15,420.20	14,070.00	844.20	14,914.20	.....	14,914.20
13. Standpipe, Lonsdale-Beaumont.						
To M'ch 31, 1900	$7,680.00	.....	.....	.....	900.48	900.48

Classification by number and letter.	Construction cost of plant to March 31, 1901.	Depreciation accrued to March 31, 1901.				
		Complete and determined by discontinuance or replacement.			Incomplete and on plant in use, estimated by percentages.	Total depreciation.
		At time of culmination.	Accretion at 6% comp.	Total by discontinuance.		
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
1. Real Estate	$25,422.00	1,000.00	60.00	1,060.00	89.60	1,149.60
2. River Station, etc.						
A. Engine House, etc.	32,775.99	3,806.34	1,141.14	4,947.48	5,027.11	9,974.59
B. Boiler House, etc.	5,048.94	1,060.44	358.67	1,419.11	296.24	1,715.35
C. Tool & Storage House, etc.	500.56	186.40	.....	186.40	.....	186.40
D. Chimney, etc.	2,463.74	2,388.74	.....	2,388.74	.....	2,388.74
E. Coal Chute, etc.	2,546.59	824.43	76.88	901.31	108.04	1,009.35
F. Store House & Fencing, etc.	499.80	289.80	35.82	325.62	21.00	346.62
G. Pumping Engines, etc.	53,023.63	16,048.51	.....	16,048.51	2,964.39	19,012.90
G. Boilers, etc.	17,868.00	4,894.00	878.38	5,772.38	1,309.69	7,082.07
H. Stairs, Grading, etc.	1,718.40	.....	.....	.....	39.15	39.15
I. Intake Tower, etc.	10,245.00	.....	.....	.....	.....	.....
3. Reservoir	33,126.00	.....	.....	.....	11,080.94	11,080.94
4. Distribution Pipes, etc.	367,858.23	16,063.38	4,624.99	20,688.37	38,362.18	59,050.55
5. Service Pipes, etc.	8,574.00	.....	.....	.....	423.36	423.36
6. Meters, etc.	8,842.70	.....	.....	.....	1,495.34	1,495.34
7. Tools, etc.	6,150.00	2,000.00	1,007.26	3,007.26	2,242.75	5,250.01
9. High Service & Filter Plant.						
A. Buildings, etc.	18,271.10	.....	.....	.....	2,244.11	2,244.11
B. Engines, etc.	4,348.98	.....	.....	.....	876.35	876.35
B. Boilers, etc.	2,598.00	.....	.....	.....	788.18	788.18
C. Filters, etc.	36,091.56	.....	.....	.....	7,988.05	7,988.05
D. Fencing, Grading, etc.	1,100.40	.....	.....	.....	115.73	115 73
10. Standpipe.	13,505.89	.....	.....	.....	1,353.82	1,353.82
11. L.-B. Real Estate Improvements	35,700.00	33,355.00	2,001.30	35,356.30	.....	35,356.30
12. L.-B. Building & Machinery	15,420.00	14,070.00	844.20	14,914.20	.....	14,914.20
13. L.-B. Standpipe.	7,680.00	.....	.....	.....	900.48	900.48
	$711,379.51	95,987.04	11,028.64	107,015.68	77,726.51	184,742.19

699 Q. Referring to your first heading, sub-paragraph "2" Plant and Improvements at River Station, explain what you mean in order that you may illustrate your method about depreciation on engine house and pit below ground line?

A. In the first place I have preserved in this analysis of depreciation, the same heads and designations of paragraph that were used with reference to same items and classes of works in the analysis of the construction cost. Under the sub-paragraph, "Engine House and Pit," and that portion of it (*a*) that was "below the ground line," (See pp. 129–132 *et seq.*) about one-third of the walls of that engine pit were torn down and replaced with additional and improved construction in the improvements that were made in 1900. Upon the basis of the original construction cost, the investment in the portion so torn down was $450.00

Under the head of "Foundation of Building," about one-half of that included in the original construction cost, was either taken out or abandoned incident to the changes made in 1894, the construction cost of that portion taken out being..... $337.50

Of that part of the original construction embodied in "Suction Pipe Tunnel" about ½ was abandoned in 1894 and the other half in 1900 incident to the improvements and extensions made in those two years respectively; so that the amount of depreciation under that item is the amount originally provided for in the estimate of construction to wit:..... $770.00

700 The cement floor was taken out in 1900, hence the amount of the depreciation accrued to that time was the amount at which the cement floor was entered in the original construction..... $122.50

The "Wooden floor" was taken out also at that time, hence the depreciation of that portion of the plant became complete as of 1900..... $40.00

The "Spiral Stairs" were taken out of the old engine pit and about one-fifth of it we had no use for and discontinued, and the balance of it was used in the new engine pit which had been built in 1894. The original investment cost of that item was $250.00. We used 4/5

of it elsewhere, therefore 4/5 of it remains in the plant, and subsequently the other 1/5 went into the junk heap and therefore $50.00 represents the depreciation accrued on that item, making accrued depreciation below ground line..... $1770.

$1770.00

That completes the depreciation upon that part of the work below the ground line.

Under sub-item (*b'*) the accrued depreciation consists of about 55 per cent. of the item of "75,000 *M* brick" appearing in the original cost, which 55 per cent. was taken down in the reconstruction of 1895, and 55 per cent. of the original cost of that item goes into the depreciation account to wit;..... $536.25

Of "10 window sills" in the original estimate, four were taken out, and depreciation on the four taken out, prorated on the original cost, represents a depreciation of..... ..... $16.00

701

On that item.

"10 large windows, four taken out" and "2 circular windows one taken out" the depreciation on construction cost =..... $45.00

"1 door and frame" taken out in 1895, original cost..... $12.00

Hence $12.00 is the amount of the depreciation on that item.

Under "roofing" the depreciation represented by the portion of this item taken down in 1895, crediting however, depreciation with the value of 750 feet of framing, lumber at $10.00 a thousand, and of slate used elsewhere, leaves as the net depreciation on that item..... 792.70

$1401.95

Sum of (*a*) and (*b*)..... $3171.95

Those values, are values as I have stated, at which the items affected thereby entered into the original construction before adding the 20 % for engineering, conductors' services and interest on capital during *contractors.* Hence to obtain the full amount of depreciation, we must add to the primary construction cost of those items 20 % for engineering, etc. which in this case is, $634.39, making the amount of depreciation which had culminated and become complete by discontinuance and replacement under paragraph "2," sub-paragraph "A" or improvements on real estate at River Station..... $3806.34

The original construction cost under that general head and paragraph was $9,730.00. Subtracting the
702 depreciation leaves a balance on which depreciation is going on but is not yet complete of..... $5923.66
Of the depreciation that is complete, to wit;..... $3806.34

The annual rate of such depreciation is determined by the useful life of such portions of the replaced plant. Assuming then to have been constructed, and the cost thereof to have been invested as of the average date of the original construction, say March 31st 1883, then the average life of such replaced portions, I have found approximately as follows:—

The further taking of this deposition was adjourned until 2 o'clock p. m. Tuesday November 11th 1902.

703 TUESDAY, *November 11th*, 1902—2 o'clock p. m.

Deposition of W. M. WHEELER resumed.

(Continuation of examination of J. W. CALDWELL:)

A. Of the portions of this item, which suffered depreciation, $450.00 of it was in use sixteen and one-half years; $337.50 was in use twelve years; half of $770.00 or $385.00 was in use twelve years; the other half of the $770.00 or $385.00 was in use sixteen and one-half years; $122.50 plus $40.00 plus $50.00 was in use sixteen and a half years, and $1401.95 was in use twelve years, making the average life of the whole amount, viz: $3171.95, 13.48 years or say 13½ years. Now the rate of depreciation—the annual rate—is represented by the fixed percentage thereof that would have to be set apart as an annuity and invested each year at a suitable rate of interest to create and provide a fund sufficient to redeem the original investment thereon—that is, the whole amount of depreciation at the end of the stated time, or at the end of its usefulness or life. I assume that 4½% is a fair average rate of interest upon the investment of such a fund; it would be difficult to find investments of a sufficiently secure and stable character that would yield more than 4½%, and the annual contributions that would be necessary to refund the principal in 13½ years if invested at 4½ per cent. would be equal to 5.56 per cent. of the whole amount to be redeemed or refunded; I have used 5½ per cent. of the amount of depreciation as the rate or the annuity that would be required each year to refund it. 5.5% therefore represents the annual rate of the depreciation that had accrued on that part of the plant under "A" having a cost value of $3,806.34, that
704 being the amount of invested value of the property that was replaced at the end of an average period of 13½ years from March 31st, 1883—that is replaced as of September 30th, 1896. Now since the revenues of the company at that time—in 1896—afforded nothing with which to meet or against which to charge off that depreciation, the amount of that depreciation has continued

as an unsatisfied deficiency during the succeeding four and a half years down to the date of this inquiry March 31st, 1901, and it was then awaiting satisfaction and redemption out of the earnings, thereby increasing also the actual amount which the company in the meanwhile had to borrow for its construction account to the extent of the accrued amount of said sum of $3,806.34 put at compound interest for said period of 4½ years. Now the average rate of interest which the company actually paid and was compelled to pay during said period on all its bonds, notes and other securities for money put into this plant, was probably more than 6%; hence I have adopted 6% as the fair rate to be allowed upon the said deficiency for 4½ years, making the accrued amount thereof to March 31st, 1901, $4,947.48. The accumulation—that is the interest accumulation on this amount during the 4½ years, during which it increased from $3,806. to $4,947.00 is $1,141.14, which is the second item in column "4" of the tabulated summary of depreciation put in this morning; (Exhibit #1, P.—166 — H). That is, the "accretion of interest" upon that item of depreciation that accrued four and a half years before. The principal from which it was derived having been the sum that was entitled to have been repaid or satisfied out of the earnings up to that time, but which for the want of
705 sufficient earnings had to continue in the investment account. "Accretion" is meant to apply particularly to the acumulation of interest upon items of depreciation that were accrued and completed prior to March 31st, 1901, upon which interes was incurred by reason of the fact that the item itself could not b refunded or charged off against earnings. "Accretion" is a term I have used in, and reserved solely for that class of items the total of which amount to the $11028. which I mentioned this morning. Now going back to the further disposition of the capital invested under the same item, the balance of that investment still remains in use; the balance of the plant not taken out and discontinued as described this morning, still remains, therefore, in use. When any portion has reached the end of its usefulness, then depreciation ceases and culminates and becomes complete upon that item, and any portion of the plant remaining is still undergoing depreciation, and for such portions as remain in use, we are obliged to estimate the rate of depreciation, since we cannot analyse it as we have in the case of those portions of the plant that have been eliminated by discontinuance. We estimate the rate of depreciation by our experience as to the life of other portions of the plant of that same general character; and the amount of depreciation accruing upon the plant still in use, we determine by applying to the capital cost represented by that part of the plant, such an estimated rate of depreciation for each year, and that I have done with all portions of the plant not discontinued, down to 1901 by applying to each portion according to its kind and character the annual rate of depreciation which is determined by my experience in those portions which came to the end of their life during the period,—and on my judgment as based upon experience in other cases.

706 Unless desired I will not amplify any farther but read the record itself which I am putting in, showing just what I have allowed. It is fair to say that it results in an average of 2% as the rate of current depreciation each year on all portions of the plant that were in actual use; That is, the result of my analysis, investigation and judgment for the period ending March 31st, 1901 as the rate to be applied on all portions of the plant that were in use and also as the rate to be applied on all portions of the plant continued in use thereafter; and the sum of the depreciation upon the various classes and portions of the plant that had become completed prior to 1901 plus the proper percentage applied to the remainder of the plant that remained in use up to 1901 makes up the aggregate of $184,742.19 testified to, and shown in this tabulation. (Exhibit #1, p. 166--H.)

Q. Mr. Wheeler, I wish you would select some part of your classification as to depreciation which will illustrate the method in which you have treated depreciation in instances where the discontinued, or disused portions of the property has in part been saved, and reapplied to the purposes of the company. In other words, where there has been salvage.

A. Well I take the item "G" "Pumping machinery and appurtenances," (pp. 134-135) referring to the Davidson Pumping machinery, which was the machinery installed in the original construction of the works in 1882, and 1883. That pumping machinery was continued in use down to the Autumn of 1900. It was then taken out because of its insufficient capacity and replaced by a pumping engine of greater economy in coal consumption, and two or three times the capacity of the displaced machinery; the Davidson pumping engine, however, is not treated as a total loss; its original cost is not all charged to depreciation. There were certain
707 portions of it which we were able to use in other parts of the plant; for instance, the air pump we used as a drainage pump in an adjacent pump well, otherwise it would probably have been sent to the scrap pile. I gave credit of $100.00 for that; in its foundation there were four cast iron "I" beams, in the original construction which were referred to yesterday, and for which we have allowed $85.00 since they were used to support the blowers put onto a new pair of boilers at the same time for induced draft, which was installed as a substitute for the old chimney stack. There were about 35,000. pounds of old cast iron pipe and fittings, which we can use again, and for which we gave credit at 1¢ per pound making $350.00, the various specials and valves, we gave credit for to the amount of $60.00, and we then estimated the fair value of the rest of the machinery and fittings as old junk, "still on sale" as such at $500.00 giving credit to that amount and making the total credits applied to reduced depreciation $1,095.00. The original cost under that head was $17,143.51, making the net depreciation the difference of those two sums, $16,048.51. Now in the same manner when cast iron pipe was taken up to replace with larger pipe, or for changes incident to the extension of high service, or other improvement in

the service; we have given credit for that pipe at its full value less the cost of taking it up; in other words, in that case only the cost of taking it out of the ground plus the original cost of laying and other incidental expenses would enter into the depreciation account. I think that illustrates the manner in which I have credited all possible salvage. Applying the same course likewise to the old
708 boilers we have sold them as second hand boilers, and their original cost minus what we got for the old boilers was the measure of the depreciation upon the original boilers.

Q. Referring to your item of $3,806.34 culminated or completed depreciation, I want to make this matter clearer, or to put it in a less technical form. Does that $3,806.34 represent money invested by the water company?

A. It does represent money invested by the water company in its plant.

Q. As a matter of fact, in this instance, has that amount ever been repaid to the company in any way?

A. It has not.

Q. Does it represent a loss or removal from the property of the company for that amount of money?

A. It does, from the physical property.

Q. Will the same statement apply to all items of completed and also of incompleted depreciations?

A. It does.

Q. I will ask you at this point to restate the amount of completed depreciation, and the use you make of it?

A. The total amount of depreciation including the item of interest accretion thereon to the amount of $11028.64 was as of March 31st, 1901, $184,742.19. That remains necessarily in the investment as investment of capital; I say necessarily because there is nothing against which to charge it off. In so far as it represents capital once legitimately invested, it continues to stand as such until it is legitimately satisfied or repaid.

Q. What is the reason it has never been repaid?

A. Because there have been no resources or revenue which would enable the company to repay it.

709 Q. When does the present contract of the water company with the city expire?

A. August 31st, 1913.

Q. If now the Water Company should attempt to pay off this deficiency, or make good this deficiency between this date and the expiration of the contract what would it be necessary for it to do?

A. It would be necessary that it should—or the only means by which it could pay it off, or wipe it out, would be out of revenues. There are two courses that are pursued so far as my knowledge and experience go with regard to that class of loss and depreciation, and one is the method usually adopted by municipalities with reference to any public works by continuing it in capital account until the debt incurred in that particular plant has been wiped out by a sinking fund for the extinguishment of the loan or capital investment. In municipal affairs, such as water works, sewerage or pav-

ing improvements usually the funds would be raised by a loan and that loan provided for by contributions to be made out of the general tax levy to a sinking fund, to be applied to the cancellation of the debt. With manufacturing corporations where the business goes on from year to year and is not expected to change by limitation of charter or franchise rights, it is customary to charge off each year, out of the earnings before paying dividends, a certain amount to cover depreciation to the end that the invested or book values of the physical assets and property, such as mills, machinery, stock, etc., as shown upon the books, shall not exceed the physical value.

I know of some corporations where practically the whole in-
710 vested value of the physical plant has been charged off so that its mills and machinery stand as of no cost, but of course that is an inadequate representation of the actual value.

Q. Can you work it out mathematically in this case?

A. Yes, sir, it is a subject of simple determination as to what the annual contribution would be that would wipe out any loss or deficiency of that sort in a stated term of years. In this case, I have considered what would be necessary in order to pay off or refund the capital that was invested in that portion of the plant which had suffered depreciation March 31st, 1901, on the termination of the present contract with the city. I have done this in the view that at that time—at least as early as then—the earning capacity of this plant may be subject to radical change. This hydrant contract terminates then; any exclusive privilege which the company now has to lay pipes in the streets will cease unless continued under further agreement. The city may choose to build works of its own, or contract with some other corporation. If by agreement this company goes on with the work, it will have to be upon terms which are mutually suitable, but what they shall be, of course, we cannot now say. It seems to me therefore that while with assurances of permanent stability in the conditions which affect future revenue, it might be perfectly and equally satisfactory to leave the depreciation in capital account, and have fair dividend returns upon it; it, would be unwise so far as the powers or rights of the company may prevent, to leave invested here at that time, an amount of capital which has not its full equivalent in the physical property; to leave, in other words, at a time, when the earnings of the company may disappear, a deficiency which could only be satis-
711 fied out of earnings. But with that deficiency satisfied or paid up the plant of the company would then be charged with only its fair physical value, at which it might fairly expect, if desired, to effect its sale or transfer, but it could of course have little expectation of selling its property for its physical value, *plus* the amount of a deficiency, the means of recouping which might be even more remote than now. Now with that view I have undertaken to find out what amount would have to be applied to a sinking fund, and invested each year to repay in 1913 the deficiency of 1901. Simply dealing with the arrears in the deficiency or depreciation account in 1901—the amount of that depreciation of $184,742.19 represents only the primary or initial construction cost

embodying the 20% for engineering and contractor's profits, and the interest, (3%) during the year of construction; but it does not embody or include the 20% made up of 5% for administration during construction, contingencies, legal services, litigation, etc., and 15% as the going value during the course of creating the live and going plant, during the early development of the business. Adding therefore this 20% in order to raise the depreciation to the same basis that we have applied to the whole investment of which it is a part, makes the amount of invested values represented by that depreciation $36,948.45 additional, which gives a total of $221,690.64; which is the portion of the entire invested values represented by *depreciation*. We have said that the securities would have to be negotiated upon a 90% basis, which would call therefore for the issue of securities or interest bearing obligations to the amount of that sum divided by 90 which equals $246,322.93.—The amount of securities outstanding to represent the depreciation accrued in 1901.

712 To refund such securities in 1913, estimating that the annual contributions to such a fund were invested on a 4½% basis would require a contribution to that fund each year of $15,929.70. This appears from the fact that to redeem $1,000. in 12 years, it requires a contribution of $64.67 each year invested at 4½%. This sum of $15,929.70 represents the further sum which would have to be yielded or provided from earnings or rates from 1901 to 1913, to refund the depreciation that existed in 1901, and to reduce the invested value in 1913 to the basis of the value of the physical plant as of that time.

Q. Returning now to the classes of depreciation that accrued to March 31st, 1901; I wish to bring out clearly first the amount as completed and determined by discontinuance and replacement.

A. $95,987.04.

Q. Now, what was the amount to which you applied the term "Accretion?"

A. The amount of the interest accretion on certain items of that sum is $11,028.64, and the amount of depreciation that was still incomplete or going on on the plant remaining in use was $77,726.51, making the total as before stated of $184,742.19.

Q. Now upon the principle that you have set out Mr. Wheeler there was on the 31st day of March, 1901, a sum of money upon which the complainant was entitled to have a sufficient net income from water rates to cover interest and depreciation respectively; what would those amount to, or what would be the aggregate of them?

A. Those amounts are first—

The total cost of the physical plant and property as before stated	$853,655.41
713 And the item of accretion upon depreciation that had become completed prior to March 31st, 1901	$11,028.64
Making a total of	$864,684.05

Q. Suppose you treat the company as entitled to issue securities of a sufficient amount to raise that sum, what amount of securities upon a good business basis, and by good business methods would it have been entitled to issue for that purpose?

A. I think it would have been entitled and would have been obliged to have issued securities sufficient to yield this amount sold at the rate of 90 cents on the dollar which would require securities to the amount of $960,760.06.

Q. I will ask you to explain a little farther the process by which you reach the conclusion last stated?

A. As I have already testified—my experience is, that upon property of this sort, the securities which it is necessary to issue to provide requisite funds for the construction of the plant, and the funding of all its construction expenditures, have to be negotiated on a basis that will yield on an average not more than 90¢ on the dollar of face value; often less than that. That difference may represent either the discount at which you have to sell the securities to attract or find an investor or the commission or brokerage which you have to pay for marketing, or underwriting them.

Q. What was the amount of interest bearing indebtedness of the water company March 31st, 1901.

A. $824,500.00.

Q. According to the principles which you have set out, is that sum within the bounds that would be set by good business management for property of this kind?

A. I think so.

714 Q. In the amount of the interest bearing debt of the company of $824,500.00 is there included all the items which are entitled to be considered in reaching a conclusion of this cause?

A. No, there are not.

Q. If there are any items which you have mentioned not covered by that amount or by those obligations, please state what the item or items are?

A. The interest bearing liabilities actually issued by the company did not cover all the services nor all of the expenditures that had been involved in building this plant. In the first place, the allowance to which I have referred for administration services and contingencies, and especially the element of 15% comprised under the general head of the going concern, is not in—is not represented by the outstanding interest bearing liabilities. As I have already stated that part of it is an element of deficiency in earnings to provide a fair return on invested value during the development period of the plant, and would not be represented in any outstanding securities. Upon the basis of my analysis and my estimate, and the best expression of my judgment, any sum substantially less than the stated amount of $960,000.00 would fail to embody all the elements and considerations of value which seem to me proper to be considered and included. That represents then upon my judgment and upon my assumptions the sum upon which—so long as the item of depreciation remains unsatisfied, and in capital account,—a sum upon which fair interest return should be provided out of earnings subsequent to

March, 1901. In addition to interest upon that item there should be an allowance to cover depreciation subsequent to March 31st, 1901, and in further addition such a fair allowance for the
715 contingencies to which I testified yesterday to be applied to the building up of a contingent account, or guaranty fund, as would be suitable and proper until that fund attained, in my judgment to 5 or 10 per cent. of the capital investment value; that would require say one-half of 1 per cent. annually for ten years, or 1 per cent. annually for five years, to create a fund that should amount to 5 per cent. of the capital investment; I think that would be a conservative allowance for such a fund. Such a fund for a Water Works Plant according to the usual practice of the companies with which I have been connected, would simply consist in applying at least a half of 1 per cent. from the income, or 1 per cent., as the case may be to reinvestment in the plant, instead of applying new capital to such extensions as might become necessary, and as are continually being made. That, in effect, creates a guaranty fund to the full extent of the earnings invested in such additional construction, or extensions of the property.

Q. Would you consider all of these items as fairly covered by the sum of $960,000?

A. I do.

Q. If you are entitled to a fair return on $960,000.00 what do you consider a fair return; I refer now to the rate of interest?

A. Not less than six per cent. would be necessary in an investment of this sort to maintain the par value, or full exchange value of the securities invested in it. Six per cent. is the legal rate of interest—six per cent. is less than the average interest cost to the company upon its interest bearing securities up to the time of this inquiry, and it seems to me that six per cent.—not less than
716 six per cent.—would be a fair rate to be allowed for interest.

Q. Mr. Wheeler, as the bare initial cost of the construction of the physical plant, you have stated the sum of $711,379.51; why should not the percentage which you have designated as the cost of creating the going concern, be added to that sum and carried through your subsequent calculations as applying to depreciation?

A. I think it should be, so far as that represents cost, and it does represent cost, or a loss of earnings to which the company is entitled. It represents capital, and when the plant disappears or the use of the plant comes to an end, that capital comes to an end. I am unable to say therefore, how we can separate from the physical plant all the elements of fair investment cost which go with it, since they all disappear together when the plant disappears. There would be a deduction, however to be made, subsequently for those portions of the physical plant that have been discontinued; there would be added to that sum the service pipes which we have not included in the cost of the physical plant—those pipes that were laid at the expense of the taker. Thus far, they have not been included at all in the construction cost. As stated yesterday, the Company maintains and renews those service pipes, and hence the maintenance which is

equivalent to depreciation in the long run, would have to be provided; so that the amount upon which depreciation would be reckoned, would embody the following items:

(*a*) Primary construction of the entire physical plant		$711,379.51
Plus 20 per cent. for administration, contingencies, legal and litigation, expenses and live and going plant		$142,275.90
(*b*) Plus additional cost of service pipes to be maintained after March 31st as summed up in the statement I have already put in		$32,830.90
		$886,486.21
From which deduct:		
(*c*) Construction cost of those parts of the plant discontinued or replaced to March 31st 1901	$95,987.04	
And the 20 per cent. allowance for administration, going concern &c	$19,197.41	
Making a total deduction of		$115,184.45
Making total amount upon which depreciation should be accounted from and after March 31st 1901		$771,301.76

That being the balance which is subject to continued depreciation, and which would have to be satisfied out of future earnings; so that the annual amounts of interest, depreciation, and contingent fund allowance that would have to be provided out of earnings, would be substantially as follows:—

Interest on $960,760.06 at 6 per cent	$57,645.60
Depreciation on $771,301.76 at 2%	$15,426.03
Contingent fund on $960,760.06 at ½%	$4,803.80
Total, assuming that the capital account remains undiminished by refunding, depreciation or until depreciation shall be refunded	$77,875.43

That would not provide anything for refunding in 1913, the arrears of depreciation existing March 31st 1901, which, as testified, would require $15,929.70 annually.

Q. Mr. Wheeler when was the filtering plant put up by the Knoxville Water Company?

718 A. The filter plant was finished in the fiscal year ending March 1895, but in the calendar year of 1894.

Q. What did that filtering plant cost?

A. Including the building and the chimney, the filtration plant, cost without the 20 per cent. for engineering &c. about $46,000 or with the percentages, upwards of $60,000.00. That building however, contains the high service pumping engine and boiler. The

boiler is used for both the filter plant and high service pumping plant.

Q. Did the construction of the filtering plant result directly in any increase of income to the Water Company?

A. Not directly, no, sir. The only increase was whatever new business might have been attracted by the improved quality of the water, but it involved, on the contrary, very large additional expense for operation.

Q. Would you say that there has resulted in such a way that it can be traced to that cause any return of compensation to the company for the construction of that filtering plant?

A. In the satisfaction of the public yes, but in financial returns, no.

The further taking of this deposition was continued until 9:30 o'clock Wednesday Morning, 1902.

719 WEDNESDAY MORNING, *November 12th*, 1902—(9:30 a. m.)

The further taking of the deposition of WILLIAM WHEELER resumed.

Examination by Mr. CALDWELL:

Q. Mr. Wheeler, what was the value of the plant and property of the Knoxville Water Company on March 30th, 1901?

A. That which I last testified to, $960,760.06.

Q. What part of it is in the City proper and what fraction of that part which lies outside of the City proper is necessary for use in serving the City proper?

A. Assuming all the elements of value to go with the physical plant, and to be distributed as the physical plant is distributed, of the total amount created 17.61 per cent. was outside the corporation limits as they were on the 31st of March 1901. That portion outside,—17.61 per cent. comprised 12.29 per cent. of the whole, not required or used for supplying water within the City limits, and 5.32 per cent., the balance, that was required and used for supplying water within the City limits.

Q. Do I understand that all the properties except 12.29 per cent. serves the City proper?

A. Yes sir.

Q. When the City of Knoxville adopted the policy of paving its principal streets with brick was there any regulation requiring service pipes to be laid from water mains in the streets to the side-walk?

A. Yes sir, the City passed an ordinance requiring the Water Company to move its pipes where needful from their then existing location so that the sewers might be laid along the middle of the street, and also to lay service pipes from the street mains to the curb lines in advance of the paving of the streets, and all at the cost of the Water Company.

720 A copy of the ordinance is herewith filed as Exhibit No. 3 to this my deposition.

Q. Were the surface pipes referred to in the last question and answer laid by the company?

A. They were.

Q. And in compliance with the ordinance?

A. They were.

Q. Do you know what the- cost?

A. The blind surfaces that were laid under that ordinance are shown upon the maps which I have here. The original number I am not now certain of. Some of them have since been used by connecting the buildings on the lots to which they were then laid, and so far as so used they are included in the valuation which I have given. The number that had not been used on the first of March 1901 was 206, and the cost and expense incident to those as well as incident to the moving of mains in the street, have not been included in the values I have testified to. I — not prepared however to give the amount of that cost.

Q. Will the General Manager or Treasurer be able to furnish that?

A. Mr. Kimball I think will be able to do so.

Q. Whatever the amount may be, has it been included in any estimate or value which you have made?

A. It is not.

Q. Reference has been made in a former part of your testimony to the propriety of allowance for organizers' and promoter's services; has such an allowance as that been made, or set out or included in your estimate of value?

A. It has not; certainly not to as full an extent as is usually covered by the term "organizers and promoters." Nothing has been allowed unappropriate to that element except in so far as the services of the officers of the company incident to the transaction
721 of the business of the company subsequent to its inception and subsequent to its acquisition of the properties that were afterwards added or acquired by the Knoxville Water Company; but nothing for the original organization or promotion of the three independent works that are now consolidated in this property, or for the negotiation of the purchase of the subsidiary works.

Q. Is that element susceptible of a statement in figures?

A. Well it is an element of judgment and difficult to reduce to figures on a logical basis, perhaps. It rests upon allowances that are made for such service. I do not know that I care to name an allowance for that; I think such an allowance as that rests upon common knowledge, as well as upon expert judgment.

Q. I desire to read to you the following extract from the answer filed in this cause, on page "10" thereof referring to the schedule of water rates adopted by your company about May 1895: "In fact defendant believes that the schedules and the ordinance were the result of negotiations between the City and the Water Company, by virtue of which the Water Company was required and prevailed upon to reduce its water rates. In fact the rates fixed by this ordinance was a concession of the city's right to regulate rates. It is not true that the City never sought or attempted to enforce its said ordinance of 1895 regulating meter rates." Are those averments correct?

A. They are not.

Q. You may make any further statement in regard to that you wish to make?

A. So far as I have any means of knowing or learning in my capacity as owner in this property, its virtual manager at the
722 time under consideration, as a director at that time, and supervising engineer of the Company, there were never any negotiations whatever between this company and any representative of the City on the question of water rates.

On the 24th of May 1894, a committee was appointed by the directors of the company to equalize water rates. That Committee consisted of the President, Treasurer and Supervising Engineer. On the 20th of February 1895, that Committee reported a schedule for the revision and equalization of rates and rules and regulations—being Exhibit "6" to the Bill—dated on its face, April 1st 1895. Exh. 3½. Those rates were adopted February 20th 1895, to take effect at the beginning of the next Quarter, which was April 1st. I had no knowledge of any consideration of the question of rates by the City until after that time. I will furnish a printed schedule of the rates that were in use, so far as any schedule existed prior to that time.

(Schedule herewith filed as Exhibit "4" to Wm. Wheeler's deposition.)

Q. I desire to read to you the following passage from the answer in this cause, on page 18 thereof, referring to investigations made by the defendant preparatory to the passage of its ordinance of March 30th 1901: "Besides the aforesaid investigation, the Chairman of the Water Committee A. S. Birdsong, proposed to make a personal investigation of the books of the Water Company, if permitted to do so, and if the statement of the officials of the plaintiff company were found to be true upon such examination, to recommend the rejection of such ordinance. This proposition was rejected
723 by plaintiff for reasons too obvious to need statement." I will ask you if Alderman Birdsong or any one else representing the defendant, at or about the time indicated in the answer, made application to you as President, for the privilege of investigating the books of the Water Company?

A. They did not.

Q. Did you ever hear of such an application being made?

A. I never did.

The further taking of deposition was adjourned until 3 o'clock Wednesday Nov. 12th 1902.

WEDNESDAY, *November 12th*—3 o'clock p. m.

The further taking of deposition of WILLIAM WHEELER resumed.

(Continuation of direct examination by J. W. CALDWELL:

Q. Mr. Wheeler, upon the assumption that $960,000.00 is the fair invested value in this case, has the Water Company been receiving a fair return from that amount?

A. No sir, it has not.

Q. Would it receive a fair return upon that amount under the ordinance of March 30th, 1901, if that ordinance were made effective?

A. No sir it would not.

The last two questions and answers objected to by counsel for defendant as expressing an opinion of the witness, and as not stating any fact.

SPECIAL COMMISSIONER: I don't think the question asked carries much weight with it, for eventually we will have to come to the figures, and I would like to know what his idea is. The exception is over-ruled.

724 Q. I have asked you elsewhere in this examination whether or not the books of the old company prior to 1890 when you bought an interest in the Water Company, afford sufficient data for ascertaining the elements that must be considered in this case, and also whether or not the books of the company since 1890 afford in all cases the adequate data for such a determination?

A. No sir, they do not.

Q. Then I will ask you to explain to the court the method that you adopted in making your analysis in arriving at the proper data and the proper conclusions?

A. *First,* I determined the quantities and amounts of work and material entering into the property, beginning the inquiry in 1891, by means of the surveys of the streets and pipe lines, and the exposure of the under-ground work in the manner to which I testified yesterday, or the day before, and by an examination of the buildings, and of the plans of those buildings and of the plant as it then existed above ground, and as supervising engineer since that time, all the new work has been done under my supervision, and through my assistants, so that I had surveys, plans and data covering all, or substantially all of the work that has been added since that time. That afforded me a necessary knowledge of what the complete plant consisted of and comprised from time to time, and there is no other source from which that information can be derived, except by a repitition of those means, and from my experience in this work, and for the dates prior to my connection with this property from my experience in other work, as of those times, I formed my best judgment as to what such work should properly have cost by unit quantities, such as the lineal feet of pipe of different sizes, the
725 quantities of rock and number of brick laid, and all the various kinds of work entering into the plant, and by what application, I arrived at my estimate, which is the expression of my judgment of the fair creative cost of this plant, and I know of no other means by which that information could be acquired. I think I stated before in testifying on this question of the fair cost of the work, that as far as I had been able to glean from the original book, which bears the name of the Knoxville Water Company it is impossible to distinguish between the items entered therein, which should have been, or might have been charg-able to construction account, and those which should have been charged to operating, main-

tenance or repair account, expenditures for labor, and all the various expenditures, as there is no discrimination between construction maintenance and repair accounts. The nature of the book in itself I am not certain about. It is particularly in doubt in my mind because of the fact that the book seems to relate to a date when there was a construction contract, and when the consideration to be paid by the Company was not cash, but securities. At all events the book did not afford me, and it could not certainly have afforded all the information necessary, even if it had been properly posted, to determine all the elements of value entering into the plant.

The further taking of this deposition was adjourned until Friday morning November 14th. 1902, at 9.30 o'clock A. M.

726 FRIDAY MORNING, *Nov. 14th,* 1902—9.30 a. m.

The further taking of deposition of WILLIAM WHEELER resumed.

(Continuation of examination by Mr. CALDWELL:)

Q. Mr. Wheeler,—you were asked last Wednesday as to the value of the plant and property of the Knoxville Water Company, and as to what part of it was in the City proper, and what fraction of that part that lies outside the City proper necessary in using for serving the City proper. I wish to ask you further on that line what part of the plant in actual use on the 31st. of March 1901 was not required for supplying water within the City limits and what part of it was required for supplying water in the City limits?

A. Of the part of the plant in actual use 6.17 per cent. was not required or used for supplying water within the City limits, and the balance 93.83 per cent. was required for supplying water within the City limits.

Cross-examination by G. W. PICKLE:

Q. What was the original capitalization of the Knoxville Water Company, and when and how fixed?

A. The original capitalization was $250,000 of common stock, and $125,000 of bonds.

Q. When and how fixed?

A. I cannot testify with absolute knowledge as to that. I suppose that the capital stock was fixed by charter. The limit as to the bonded debt was fixed under a contract with the City.

Q. I wish you would look at a copy of the charter on file in this case and state whether or not it does fix the amount of the capital stock? (Hands witness charter.)

727 A. I find among the provisions of the rights under the charter "to fix upon the amount of capital to be invesetd in the corporate business; the division of the same into shares, the time required for payment thereof by subscribers for stock, and the amount to be called for at any one time, on the non-payment of which after notice, a right of action shall accrue to the corporation against the stockholder in default." I find nothing further n the

charter on that subject, so I presume that the amount of capital stock was fixed by the corporation under that power.

Q. So the amount of the capital stock is not fixed in the charter?

A. The specific amount appears not to be stated in the charter.

Q. And the corporation, through its appropriate officers, are authorized to fix the amount?

A. I think so.

Q. Now what I want to know is, what amount was fixed, and when and by what sort of action of the corporation it was fixed?

A. I should have to go to the record books of the company for that. I have no source of information on that subject at present. I have not investigated that subject, but I will do so if General Pickle desires.

SPECIAL COMMISSIONER: All right, that may come up later.

Q. Have you a book of the corporation containing its action fixing the amount of capital stock?

A. I cannot say whether that action is in the record books of the company or not, but a book of the stockholders' records and a book of the directors' records are at the Water Company's office. I have not it here, nor have I examined it to see what the particular
728 facts are in regard to your inquiry.

Q. Will you produce those books and furnish a copy of all the action taken by the corporation, its directors or stockholders in the matter of fixing the original capital stock?

A. I will, if it is appropriate.

SPECIAL COMMISSIONER: The Court holds that the books are open for the purpose of the foregoing inquiry.

(Record Book #2—and record—Stockholders here produced.)

(The WITNESS:) So far as I know, these comprise all the records that the present management of the Company have any knowledge of. The oldest of these two books, contains the following letter attached to its fly-leaf, which is as follows:—

"Middlesborough Town Company.
A. A. Arthur, Pres. & Gen. Mgr.; Jno. B. Cary, Sec'y & Treas.; Jno. M. Brooks, Res'd't Manager.

MIDDLESBOROUGH, KY., *June 11th*, 1890.

Edward T. Sanford, Esq., Knoxville, Tennessee.

DEAR SIR:: I have your favor of the 9th inst. inquiring about the Record Book of the Knoxville Water Company. It has been a long time since I have seen that document. I think it is in the vault of Harry Aiken's Bank. In cleaning up there, George Arthur told me that he put all the books and papers he could find into that place. It was in my dest and that desk was emptied there,
729 so George Arthur informs me.

Yours truly,

JNO. M. BROOKS,
Per Prv't Sec'y."

That is attached to the fly-leaf marked *"Knoxville Water Company Record Book No. 2, April* 10th 1890. In the other Record Book, the first entry entered therein is as follows:—*"Office of Knoxville Water Company, Knoxville, Tennessee, September 1st 1893. Stockholders' Meeting."*

Q. Then you have no Record book in the office of your Company showing action of the stockholders or directors of the Knoxville Water Company from the date of its organization or charter until April 1890?

A. None that I know of.

Q. Have you any copy of the proceedings of the corporation by its directors or stockholders prior to April 1890 in the office of the Water Company?

A. I have a copy of certain depositions made in the case of Knoxville Water Company *vs.* Board of Mayor and Aldermen, tried about the year 1888, which I copied from the transcript of the testimony in the Supreme Court. Beyond those, I don't recall that I have any information concerning the proceedings of which you inquire.

Q. Do you know as a fact, and is it not a fact that the original capital stock, by which I mean the capital stock fixed by the corporation to be subscribed and paid by stockholders, was fixed at $200,000.00?

A. That may be so so far as I know. In my first answer I was referring to the amount that was outstanding at the time we acquired an interest in 1890. If I may now add to my previous answer as to whether the Company has any records, I think the Treasurer has the original Stock Certificate Book, and if so, I pre-
730 sume that would show the stock issues, but I do not think that falls under your inquiry.

Q. Will you produce and examine that book and see whether it affords the information?

A. I think I should have to say to that that it seems to me that the treasurer would be the competent one to interpret that. I will do anything the Court thinks is proper.

SPECIAL COMMISSIONER: You may produce it, and if you cannot answer the question you may say so.

(The WITNESS:) The Treasurer tells me that the Stock Certificate Book is in his office at Boston.

Q. Will you have that book forwarded to Knoxville and produce for inspection for the purpose of getting the information above asked?

A. I will.

Q. How soon can you get it?

A. We will wire for it immediately, and have it sent down as soon as possible.

Q. From whom did you receive the books of the old Company when Wheeler and Parks became interested in the Knoxville Water Company?

A. I can only say generally from the management that preceded

us—I couldn't say as to the individuals, but I think General Hood.

Q. Who, in point of fact received them Mr. Wheeler?

A. I am unable to say definitely who individually received them.

Q. What books did you receive?

A. I think that at the time of our original purchase the Record Books continued for a time thereafter in the possession of the several officers having them in custody. Mr. Edward T. Sanford
731 was continued as Secretary for several years after we became interested in the property, and as such had the record books. They were received from him when he ceased to be Secretary, and I think passed at once to Mr. Mulhall, who has since been the secretary. I do not remember about the Treasurer's books and the Stock Certificate Book when they were received, or to whom they passed. That applies also to any books that appertain to the Treasurer's office—what those books were, I am unable to say, as I have never had to do with the Treasurer's books.

Q. There are several of them, are there not?

A. Yes sir, as I understand, there are several books in the Treasurer's hands,—there are now. I am unable to say whether there were more than one at that time—I think there were several.

Q. Have you any memorandum or copy of receipts showing what books were turned over to you or your company?

A. Well, I hav-n't here; I have no recollection about that; I should think the receipts would be on the other side.

Q. Could you not ascertain the capitalization of the company from the certificate of stock that you hold?

A. I should think that it might be reasonably inferred from the certificates of stock—not that I hold, but from the stock certificate book of the Company. That wouldn't be proof, but would show what was actually issued.

Q. Have you a certificate of the original stock that was issued?

A. I have in Boston—I hav-n't here—I think I have one certificate of the original stock that was issued for one share at my office.

732 Q. Will you produce it?

A. I have one in my desk at the office. I can produce such a certificate if you wish to see what is printed or inscribed on the general certificate, though that will appear in the book which we are to send for.

Q. Is that one certificate you have in a book?

A. No sir, it is simply a certificate of stock issued to me as a stockholder.

Q. I refer to your original stock; is it in a book?

A. It is in the original certificate book yes.

Q. Then you have the original certificate book?

A. The Treasurer has; that is the one I say we are sending for.

Q. It will show will it to whom the stock was originally issued, and to whom it has since been transferred?

A. I presume it will. I speak only as to general knowledge of the nature of such a book.

Q. What of the original books of the Water Company beside the Certificate Book that you have spoken about, are in Boston?

A. I do not know of any.

Q. If there are others, will you have them forwarded?

A. I will.

Q. Have you copies here of any of the original books in this office?

A. No sir.

Q. Can you give the names of the subscribers to the original stock of the Company?

A. No sir I cannot with any information at my disposal at present.

Q. Do you not know any of them, or the amounts for which they subscribed?

733 A. No sir, I am utterly unable to give you any information on that subjject.

Mr. CALDWELL: I wish to except to the question as irrelevant and incompetent for any of the purposes of this inquiry.

COMMISSIONER: All right; in the order of reference the exception is over-ruled.

Q. Do you know what price was paid by the original subscribers for their stock?

A. I do not.

Q. The capital stock of the company seems to have been raised from the original amount of $200,000.00. I will ask you to state to what amount it was raised, and what is the present capital stock of the Company?

A. I cannot answer as to what increase in the amount of capital stock may have been made from time to time prior to 1890, but the amount outstanding in December 1890 I am informed was $250,000.00—I think that is correct. We bought stock upon that basis, and since then additional issues of stock have been made. The purchases of stock made by or through Wheeler & Parks from 1890, through two or three years following, amount to about 2425 shares, and we had information as to the whereabouts of nearly 75 additional shares outstanding. Since then, additional stock has been issued, according to the best of my present information, so that the total amounts outstanding from time to time, have been substantially as follows:

In 1894	Preferred	1750	shares,	Common	stock	4000	shares
" 1895	"	2759	"	"	"	6000	"
" 1896	"	2930	"	"	"	6325	"
" 1897	"	2950	"	"	"	6450	"

734 and those amounts have continued unchanged down to the present time.

Q. Has there been any amendment of your charter since 1890

A. I do not think there has been any.

Mr. CALDWELL: We will admit that there has not been any.

Q. Has your company any charter powers except those conferred by the original charter bearing date 27th day of December 1881,

and the amended charter bearing date 25th July 1882, copies of which are on file in this case?

A. I am unable to state.

Q. Do you know of any other amendment of your charter?

A. I do not at present.

Q. By what authority was this additional stock issued over and above $200,000.00?

A. By authority of stockholders at a meeting held September 1st and adjourned until September 6th 1893, and by the powers delegated by them to the directors, and the action of the directors October 26th 1893?

Q. Have you the book before you containing that action?

A. I have.

Q. I would like to look at it please.

A. It comprises pages "5" to "21" inclusive of the Record Book of the Stockholders' meetings, which I hand you, which not only contains the votes of the stockholders upon that subject, but also a code of by-laws adopted at that time.

Q. I will ask you to exhibit with your deposition copies of the proceedings of the stockholders under date of September 6th 1893, authorizing issuance of additional stock and taking other action, found on pages "5" to "21" of the Book that you exhibit, and

735 likewise copy of the action of the Directors?

A. I will furnish such a copy of the action of the stockholders Exh. 5 and also of the directors, as shown on pages "53" "54" and the first six lines of page "55" of "Record Book No. 2," as Exhibit #6.

Q. To what amount did this action of the stockholders and directors of the Knoxville Water Company increase its capital stock?

A. It resulted in an actual increase to the amount I have already testified.

Q. What amount was authorized by this action?

A. The total amount authorized by that action was $1,250,000, or 12,500 shares.

Q. What amount of preferred stock did it authorize the issuance of?

A. Of the 12,500 shares, to which I have testified, 5000 shares "or such smaller portion thereof as the directors may, in their discretion order" was allowed to be made and issued as preferred stock.

Q. I notice in the action of the stockholders' meeting referred to, that a committee had previously been appointed and reported. Can you state who composed that committee.

A. The record shows that "upon motion the Chairman appointed W. H. Hague and J. A. Adams a committee to report as to stock present or represented at the meeting." The committee about which you inquire, is the committee which is referred to in the quotation, which I have just read from the record.

Q. Who was supervising engineer of the Company at that time.

A. The firm of Wheeler and Parks were supervising engineers at that time.

736 Q. They were likewise the owners of 2417 of the 2425 shares of stock represented in this meeting, were they not?

A. I think they were—at least the stock stood in their name as of that time.

Q. You have stated in your examination in chief that about December 1890 you purchased from certain citizens of Knoxville, a controlling interest in the stock of the Knoxville Water Company. Had you been interested in the Company before that time?

A. No sir.

Q. Had you been in Knoxville before that time?

A. Not very much before that time. I think my first visit to Knoxville was made in the month of November 1890— of October or November 1890—it was in the Autumn of that year.

Q. From whom, giving all the names, did you purchase a controlling interest in the stock of the Knoxville Water Company?

A. I gave all the names from whom the controlling interest was purchased in my direct examination.

Counsel for plaintiff excepts to the question as irrelevant.

COMMISSIONER: He has stated in his former answer from "Citizens of Knoxville; Mr. C. M. Mc-hee R. N. Hood, E. J. Sanford, Mr. Samuel McKinney and Frank McNulty. I will name others if you wish but the first three whom I have mentioned were those of whom the controlling interest was acquired in December 1890."

Q. Then how many shares did you acquire from the three gentlemen to wit; C. M. McGhee, R. N. Hood and E. J. Sanford
737 from whom you say in your examination in chief you bought a controlling interest in the stock of this corporation?

A. 1350 shares.

Q. Was there a written contract between you and those gentlemen?

A. I think there was a memorandum of the terms of the purchase—I am not quite sure of it, but that is my impression.

Q. Will you produce it for inspection and file the same as a part of your deposition?

Counsel for *plaintiff* excepts to the question as asking to put into the record something that is irrelevant, incompetent and not involved in the issues in this case.

COMMISSIONER: I hold that the witness cannot be required to produce this contract, but that the witness can be compelled to answer how much was paid for the stock.

Counsel for *defendant* excepts to the ruling of the Commissioner refusing to require the production of the contract above inquired about, and appeals to the courts for instructions, insisting that the proper evidence of the amount paid, as well as of the conditions of the contract itself which the defendants insist will show conditions and limitations seriously affecting the amount stated as the consideration.

Q. From whom, besides the three gentlemen named who furnished the controlling stock in the company, have you purchased other shares of stock, and when?

A. From Sam McKenney, Frank McNulty, James Comfort, Mrs.

Barton, C. W. West, Grace W. Hinsdale, and George P. Sheldon, and those purchases were all made and consummated down to and including the year 1892.

738 Q. Give the number of shares purchased from each of these parties respectively, and the price paid?

A.—

Sam McKinney	100 shares	
Frank McNulty	149 "	$5478.35
James Comfort	15 "	$8162.74
Mrs. — Barton	10 "	$ 821.75
C. W. West	15 "	$ 500.00
Grace W. Hinsdale	70 "	$ 375.00
R. N. Hood	5 additional shs	$1750.00
Geo. P. Sheldon	711 Shares	$ 267.50
		$18296.27

Q. Is that all?

A. That is all, excepting the first 1350 shares bargained for in 1890, then owned by the three gentlemen of whom I have spoken.

Q. How and on what terms were these shares paid for?

A. They were paid for in cash in the amounts I have stated.

Q. Did these amounts that you have just given, include interest on notes that you had given at the date of the original purchase—any of them?

A. I think some of those lots of stock were bargained for, and at the time of the bargain paid for partly in cash and the balance in notes which accrued from time to time, and that these payments which I testified to represented the original purchase price plus accrued interest—that is my impression—that is in effect the sum of the original price with accrued interest on that price to the time of final settlement.

Q. Did you make up an inventory of the property at the time it was purchased by you?

739 A. No sir. I think we were perhaps shown on the books, the general condition of the company, but no complete inventory of its property appeared as I recall. Those facts we determined by the physical survey of the property, as I testified on my direct examination.

Q. Is there any further authority than that which you have already given for the issuance of preferred stock?

A. I recall none.

Q. Who holds that preferred stock now?

A. I cannot give you that information as to the present holders. That would appear from the stock book held by the Treasurer.

Q. Who were the purchasers of the preferred stock?

A. The preferred stock was originally issued to Wheeler and Parks as consideration under a construction contract.

Q. What construction contract?

A. The contract made November 17th 1893.

Q. With whom?

A. Between the Knoxville Water Company and Wheeler & Parks.

Q. Have you a copy of that contract?

A. I have. (Exh. 6½.)
Q. Let me examine it, will you, or the original?
A. I have the original. (Hands attorney contract.)
Q. Wheeler & Parks at that time owned a controlling stock in the Knoxville Water Company?
A. They did.
Q. And they were the parties with whom the Knoxville Water Company contracted?
A. They were.
Q. Did any of this preferred stock go into the hands of anybody except Wheeler & Parks as original purchasers?
A. I think not; I recall none at present.
Q. The original shares were all issued then to Wheeler &
740 Parks?
A. I think so.
Q. To whom were the shares of common stock issued after the capital stock of the corporation had been enlarged as you have heretofore stated?
A. To the same firm, Wheeler & Parks.
Q. Have you issued any bonds since the Company came under your control—I mean Wheeler & Parks?
A. Not prior to the action now on trial—by that I mean on up to March 30th, 1901.
Q. You have since that time put some bonds on the market have you?
A. Yes sir, the Company has.
Q. Has it sold any of them?
A. Yes sir some of them have been sold.
Q. To whom?
A. To H. M. Payson & Company, Bankers of Portland, Maine.
Q. What rate of interest do they bear?
A. On the face value of the bonds, 4½ per cent.
Q. I notice in your bill, you say something about some debenture bonds $85,000.00; when were they issued?
A. Sometime prior to 1890—I cannot say when.
Q. Prior to 1890?
A. Yes sir, prior to December 1890.
Q. By whom are they held at present?
A. I do not know who the parties were. That does not come within my information.
Q. Doesn't your company have communication with them?
A. I presume coupons are paid on presentation at the banks, but the individual owners I have no means of knowing. I think they have been refunded since 1901.
Q. They are not outstanding then?
A. My impression is they are not.
Q. Do you know to whom they were originally issued?
A. I do not.
741 Q. Was there a provision in this contract that I inquired about in reference to those debenture bonds; I refer to the

contract that you declined to produce between yourselves and Col. McGhee and others?

A. I think there was a provision in the negotiations of purchase in 1890, that no increase in the mortgage debt or bonds of the company should be made without taking care of any outstanding debenture bonds. That is the best of my recollection.

COMMISSIONER: You mean these debenture bonds were outstanding when you bought that stock?

A. They were.

COMMISSIONER: And part of the contract was that no other bonds should be issued until all of them had been paid?

A. Yes, sir, or else taken care of.

Q. Don't you know as a fact that these debenture bonds were held by those gentlemen at the time they sold?

A. I think they held part of them, but I don't think they held all of them. I think the Treasurer can give you information on that point.

Q. And didn't you refuse to assume responsibility of those debenture bonds they held?

A. I don't remember anything of that kind.

Q. Is there not a provision in your written contract that you didn't assume liability for the debenture bonds those gentlemen had?

A. No, sir, I don't recollect anything of the kind.

Q. Will you please produce such a copy of the same and file it?

A. I will, subject to the order of the Master.

COMMISSIONER: I will not order it at this time.

742 Q. Will you examine that contract and state whether or not there is such a provision in it, and what it is?

A. I am very confident there was no such provision of that sort. I think I can testify as to that with absolute knowledge. I think it conflicts with the testimony I have just given, that is that one of the conditions of the negotiation was that we should not increase the mortgage or bonded debt without taking care of the outstanding debentures.

Q. Where is that contract Mr. Wheeler?

A. If you mean the memorandum to which I refer, if it is anywhere, it is probably in my office at Boston.

Mr. PICKLE: Well, we ask again for the production of that contract for the purpose of showing that these debenture bonds were excepted from the liability that they assumed on the purchase.

Q. Wasn't the gentlemen from whom you purchased a controlling interest in this Knoxville Water Company to secure certain legislation?

A. No, sir.

Q. Did you never hear about that?

A. As a matter of any agreement or understanding or implication?

Q. Yes, sir.
A. No, sir.
Q. Did you not know that certain legislation was required in order to validate and make effect of those bonds?
A. No, sir, I never heard it mentioned.
Q. Wasn't it contemplated or talked about?
A. Not contemplated or ever discussed that I know of. We respected them and protected them, and intended to do so at that time.

743 Q. Well for the common stock I believe you stated that the common stock was issued to Wheeler & Parks?
A. The additional any stock was so issued.
Q. Upon what consideration?
A. Upon the consideration named in that contract of November 17th, 1893.
Q. In that construction contract?
A. Yes, sir.
Q. All of it issued to you?
A. All that has been issued—not all that was authorized—I think that is true of all additional stock that has been issued—I recall nothing issued on other accounts.
Q. You still hold that stock?
A. No, sir, only a part of it.
Q. Have you a controlling interest in it?
A. No, sir.
Q. I mean Wheeler & Parks?
A. No, sir, we have not.
Q. Don't they control the Knoxville Water Company stock?
A. No, sir.
Q. Who does?
A. The stockholders as a body, and no separate set of stockholders control the company—at least 100 or more.
Q. Haven't Wheeler & Parks a controlling stock in the company?
A. They have not, except as controlled by the will of the stockholders as delegated to the officers.
Q. Well upon what consideration—has the stock been sold by Wheeler & Parks?
A. It has.
Q. When was it sold?
A. At various times; from 1893 down to 1894, 1895 and even to 1896 to a large extent. Since then only small amounts have changed hands in the ordinary exchange of stock holdings. I think there are approaching 200 stockholders at the present time.

744 Q. Mr. Wheeler, do you know what proportion of the original capital stock of this company was ever paid into the treasury?
A. I do not.
Q. Did you ever undertake to collect stock subscriptions after you came in?
A. When you say "you" do you mean Wheeler & Parks, or the company?

Q. I mean the company.

A. No, sir.

Q. Did the transfer of the Knoxville Water Company carry with it all the dues of the company when you bought into it as you understood?

A. Certainly. In other words the dues made against the company afterwards as well as before.

Q. And if the original subscribers hadn't paid their stock it was still due to the company?

A. That is a legal question, but I could not say anything to the contrary.

Q. Turning to the amount of the un-paid stock due from a subscriber: I will ask you if this is not one of the provisions of your charter "The amount of unpaid stock due from a subscriber to the corporation shall be a fund for the payment of any debts due from the corporation and the transfer of stock by a subscriber shall not relieve him from liability on his subscription until the amount thereof has been paid." Is that not one of the provisions of your charter?

A. Yes, sir.

Q. So long as stock subscriptions on such gentlemen as orginally subscribed for and held the stock of this company, there
745 would be no necessity for the issuance on mortgage or debenture bonds, would there Mr. Wheeler?

A. Well, evidently I should think that should be answered, no.

Q. Mr. Wheeler, in the amended charter, a copy of which is on file in this cause, dated above the names of the incorporators "5th of July, 1882" I find this clause: "This corporation is prohibited from issuing bonds in excess of the sum of $125,000. par value for a period of five years next following July 1st, 1882, and after that time in excess of $25,000. additional, and the indebtedness of said corporation by bond shall not at any time exceed the sum of $150,000. All bonds issued in violation of this provision as to said corporation shall be utterly null and void, shall not be obligatory upon said corporation as a debt, nor in any way constitute a charge upon its property real or personal, but shall be only the personal and individual liabilities and obligations of the officers and stockholders actually participating in such wrongful issuance of the same." Now I will ask you whether or not to your knowledge at the date of the issuance of these so called debenture bonds there had been any modification of this amendment to your charter?

A. Not that I know of.

Q. And I believe you have already stated that when you purchased some, if not all of these debenture bonds were held by the gentlemen from whom you purchased the controlling stock?

A. I assume they were. I do not call them bonds though however. They were in effect a debt of the company—they were a printed note with coupon attached and were supported by no character of security or lien other than by a note of the Treasurer authorized by the directors. They didn't incumber the property in the nature of a mortgage.

Adjourned until 2 o'clock P. M.

746 2:30 P. M.

Cross-examination resumed:

I testified this morning to the effect that I thought all the capital stock issued since 1890 had been issued under and by virtue of the contract of Wheeler and Parks of November, 1893; I find however, that there appear to have been two or three, or possibly four small issues of stock since that contract was settled, which issues have been in consideration of other things going into construction account.

Q. Mr. Wheeler are the original books of the Water Company all here in Knoxville, or are they at Boston?

A. Those which have been kept by the present Treasurer are all here; all of the others were telegraphed for last Wednesday evening, and are expected to be here by next Monday.

Q. Have you duplicates of those books?

A. No, sir, there are no duplicates.

Q. On page 17 of your examination in chief you say that you discovered that under the City Ordinance of March 30th, 1901, that $12.00 will purchase certain amounts of water in three catagories of that ordinance; I will ask you to examine the ordinance under which you are at present operating and state if the ordinance of March 30th, 1901, is not an exact transcript of the ordinance under which you are operating, except as to the rates of charges?

A. They are the same as to the limitation of quantities but the essential consideration in the rates being the price—and the relation of the price to the quantities being so very different, it results in the inconsistency in the city rates about which I testified and which does not exist in the rates which the company are charging as
747 shown in Exhibit "6" to the bill being the rates rules and regulations of the Knoxville Water Company.

Q. In both ordinances this proviso follows the meter rates *do* and does it not provide that the charge at any given rate shall not exceed the maximum charge at the next lower rate?

A. Yes, sir, in effect it does.

Q. Now look to your rates fixed by the ordinance under which you are operating, a copy of which is exhibit "6" to your bill, and state if it is not true that $20.00 under that regulation will buy a 100,000 gallons of water at 20 cents, and that the same amount, to-wit: $20.00 will buy 133,333 2/3 gallons at 15 cents?

A. Yes, sir.

Q. Is it not true that under that regulation $18.00 will buy 150,000 gallons of water at 12 cents and 180,000 gallons at 10 cents?

A. Yes, sir, that's true. That's essentially true of any schedule where the change in rate applies to the entire quantity of water used up to the quantity which entitles the taker to the next change in rate, but that is not the limitations of the criticism which I indicated in my testimony regarding the city's rate; the fact being that under the city's rate an intermediate quantity at a price intermediate between the higher and lower price is entirely eliminated. A fixed price will secure different quantities of water under three different

rates, and it results in an absurd variation of the quantity of water which a certain price will buy. It is true it is a necessary condition of any rate where the one price changed from one quantity to another, that there should be a small interval in which the quantity can be increased without increasing the cost of the taker.

748 Q. Nevertheless it is true under your rate that you are enforcing, one customer for $20.00 can get only 100,000 gallons while another can get 133,333 2/3 gallons?

A. That is true as I have already testified—essentially true.

Q. And in another catagory another customer can get 150,000 gallons for $18.00 while still another can get 180,000 gallons by paying the same amount?

A. That is true. In other words the ratio of variation in the quantity where one price meets another is simply equivalent to the variation in the ratio of price per 100,000 gallons, but in the city schedule the ratio is very different.

Q. Mr. Wheeler, examine exhibit "3" to the answer in this case and Exhibit "4" also, the former being a letter, or purporting to be a letter from Mayor S. G. Heiskell, the then Mayor of Knoxville, to A. S. Birdsong and others, composing the water committee of the City Council, said letter being dated July 16, 1900, and the other, Exhibit "4" purporting to be a letter from A. S. Birdsong, Chairman of the Water Committee of the City Council to the Knoxville Water Company and its Knoxville Superintendent, Mr. Kimball, the latter letter being dated July 16, 1900, and state whether or not those letters were referred to you at or about the time they were written?

A. They were not referred to me directly, so far as I recollect; I would not be able to testify positively that I had seen the Mayor's letter, or a copy of it; I have an impression of having seen the letter from Mr. Birdsong, and for all I know, this may be the letter that came to the Treasurer's office; I would not be able to identify

749 it and would not undertake to say this was not a correct copy of it.

Q. Please examine Exhibit "6" to the answer in this case, purporting to be a letter to Mr. A. S. Birdsong, Chairman of the Water Committee of the Board of Mayor and Alderman of the City of Knoxville, from the Knoxville Water Company signed by Frank C. Kimball, Superintendent, dated July the 17th, 1900, and state whether that is the genuine letter and the original letter written by the Knoxville Water Company and whether it bears the genuine signature of Mr. Kimball?

A. I would testify to the signature as being genuine but that's all I have any knowledge of.

(Counsel agreed for the Knoxville Water Company that the letter above referred to is the genuine letter written by the Water Company, and that it *bares* the genuine signature of Mr. Kimball.)

Q. Have you the original letter written to you by Mr. Birdsong?

A. I know nothing about the original letter as it would not be in

my possession even if such a letter had been written, not in my files.

Q. In whose possession could we find it?

A. I expect in the files of the officer to whom it was addressed.

(Counsel for the Knoxville Water Company admits receiving a letter that was forwarded to Mr. Kimball purporting to have been written by Mr. Birdsong but they have not compared it with the newspaper clipping.)

750 Q. Please examine Exhibit "7" to the answer in this case, which purports to be a copy of a letter to Mr. Birdsong, dated Boston, Mass., July 20th, 1900, and signed Knoxville Water Company, Elbert Wheeler, Treasurer, and state whether that is a correct copy of a letter written by the Knoxville Water Company to Mr. Birdsong?

(COUNSEL FOR WATER COMPANY: We admit that Mr. Elbert Wheeler, in response to Mr. Birdsong's letter, wrote a letter, the substance of which is set forth in this Exhibit, but as to whether this is an exact copy, we can not admit, but we call upon the defendant now to produce the original.

General PICKLE: The defendants call upon the Water Company to produce the originals of Mr. Heiskell and Mr. Birdsong's letters.

Mr. WHEELER: (Witness) I know nothing about the whereabouts of any of those letters. I have no recollection of having seen the Mayor's letter.)

Q. When did the North Knoxville Water plant, owned by Wheeler and Parks, pass to the Knoxville Water Company?

A. I am unable to say when the instrument of transfer was made. I have no memorandum here which would show that. The contract for the transfer is contained in the contract of November 17, 1893, which is the contract between the Knoxville Water Company and Wheeler and Parks, dated Nov. 17, 1893, about which I testified this morning.

751 Q. About what time did the transfer take place pursuant to that contract?

A. I am not certain it is not conveyed under this contract; I am not certain whether a separate transfer was made or not, but I can state as to that later.

Q. Was any permission obtained of the City of Knoxville for the making of that contract and operation under it?

A. I think I had better answer that question when I see the transfer and also the North Knoxville contract again, if that is agreeable to you as my recollection is not clear as — the details of that now.

Q. Was that contract ever, in any way, brought to the attention of the Board of Mayor and Alderman of Knoxville.

A. I do not at present recollect the particulars in that regard.

Q. That North Knoxville plant was owned by Wheeler and Parks as individuals was it not?

A. It was.

Q. And it was transferred to the Knoxville Water Company after you had—that is Wheeler and Parks—obtained a controlling interest in the Knoxville Water Company, was it not?

A. It was both created and transferred after we had obtained a controlling interest in the Knoxville Water Company.

Q. It was erected and operated in territory entirely outside the City of Knoxville at that time was it not?

A. It was, yes sir in a separate municipality.

Q. What was the population of North Knoxville at that time?

A. I think in the vicinity of 2000.

Q. What was the population of the City of Knoxville at that time?

752 A. About 22,000 or 23,000.

Q. What was the comparative area occupied by the two towns at that time?

A. I don't know what the areas were.

Q. The city of Knoxville was much larger not only in population but in territorial extent, was it not?

A. I am not able to say about that; I think it was, however.

Q. Prior to the making of this contract was there any connection between the plants of the Knoxville Water Company and the North Knoxville Company?

A. Yes sir, Wheeler & Parks obtained the water for supplying North Knoxville from the works of the Knoxville Water Company, and filtered it in North Knoxville, and it was distributed through the North Knoxville system of pipes.

Q. Did you have a filter system in North Knoxville before this contract was made?

A. Yes sir.

Q. What has been the increase in population in North Knoxville since that plant was built?

A. I don't know; I have not at hand the population of North Knoxville by the last census.

Q. Were not the rates upon which you furnished water to the people of North Knoxville—that is, Wheeler & Parks furnished it under their contract with that town, substantially the same as the rates upon which water was furnished to the city of Knoxville?

A. At the same time you mean?

Q. Yes sir.

A. I think they were not: I think they had an independent schedule, that is, each plant an independent schedule. The
753 contract with the town of North Knoxville will show what the rates were.

Q. I will ask you to compare the two?

A. I beg your pardon, Gen. But the schedule you have in your hand was not the rate in vogue in Knoxville at that time.

Q. Are not the rates then upon which you are furnishing water to the City of Knoxville at present, embracing the old city of Knoxville, North Knoxville and West Knoxville substantially the same as the schedule of rates provided in your contract with North Knoxville; the schedules of these rates are made Exhibits "3" and "6" to

the bill in this case, and I will ask you to compare them and state if in their main features, they are not substantially the same?

A. As for West Knoxville, the rates at which water is furnished there are not the rates of the Knoxville Water Company as shown in Exhibit "6" but they are the rates provided for in the contract which was originally made between the Lonsdale-Beaumont Water Company and the town of West Knoxville.

As to the comparison between the rates provided in the contract with North Knoxville and those now charged by the Knoxville Water Company, they are in many respects substantially the same; where they differ the North Knoxville rates are not so closely defined, and are subject to latitude, whereas in the Knoxville rates limitations are fixed. The North Knoxville rates also authorize higher charges for meter rates except for mechanical purposes, and there they closely agree with those of the Knoxville Water Company so far as they are limited.

754 Q. Are they not identical in the following particulars, to-wit:

Private dwellings occupied by one family	$6.00
Four rooms or less	6.00
Five rooms or less	7.00
Six rooms	8.00

The North Knoxville in this last item, reading—six rooms or more, $8.00 and upwards, while your present schedule adds fifty cents for each additional room.

For bath-tub (family)	$5.00
Water-closet	5.00
Urinal	5.00
Bakeries	5.00
Private stables, per stall	2.00
Dwellings with lawn, 50 ft. front	8.00
Fountains, 6 hrs. per day for 7 months, each year—	
1/16" jet	5.00
1/8" jet	8.00
3/16" "	12.00
5/16" "	45.00
Building purposes, laying brick per 1 thousand	.10
Laying stone per cubic yard	.04
Plastering per 1 hundred square yards	.35
Hotels	meter rates.
Steam engines per horse power	2.50
Barber-shops, one chair	5.00
Each additional chair	2.00
Public bath-tubs	10.00

Stores, not specially rated according to occupation, and perhaps others.

755 A. As to the charge for private dwellings, as determined by the rooms, the rates are as you have stated. Bath-tubs,

private in North Knoxville, $5.00; in Knoxville, one bath-tub for one family, $5.00; each additional bath-tub, $3.00.

Water closet in North Knoxville, private, $5.00; in Knoxville one water closet of approved kind for one family $5.00; each additional water closet, $3.00.

Urinals, in North Knoxville, private, $5.00; in Knoxville one self-closing urinal for one family, $3.00; each additional urinal, $2.00.

Bakeries, per each barrel of flour used daily, $5.00 in each case.

Livery and Sale Stables in North Knoxville, hose privilege extra, per stall, $2.00; private stables per stall, $2.00; in Knoxville, livery and sale stables, meter rates; private stables, each horse or cow, $8.00, hose privilege extra.

Dwellings with lawn, that comes under the head of sprinklers and street washers, and the rate in each case for 50 feet front is $8.00.

For Fountains, the rate is the same if charged for by the fixture, but the Knoxville rate provides that they may be charged for by meter, at the discretion of the Company.

Building purposes, for laying brick per thousand in each case is the same.

Laying stone is the same in each case.

Plastering is the same in each case.

Hotels and Boarding Houses, North Knoxville at special or meter rates; in Knoxville at meter rates, and hence they differ as the meter rates differ.

Steam engines per horse power, $2.50 in each case.

756 Barber-shops in each case, first year, $5.00, each additional chair, $2.00; provided, however, in case of Knoxville no rate is less than $8.00.

Public baths, North Knoxville, $10.00; Knoxville, one tub $10.00, each additional tub, $5.00.

Stores in North Knoxville, according to occupation and use, $8.00 and upwards; in Knoxville one faucet for one tenant, $8.00, each additional faucet, not otherwise rated, $3.00.

I might add, perhaps that in 1899, when the ordinance was passed authorizing the consolidation with the North Knoxville plant, the rates were made the same for Knoxville and North Knoxville, leaving those in West Knoxville to be continued as provided under the contract between West Knoxville and the Lonsdale-Beaumont Water Company.

Q. Then you are charging a higher rate under your present ordinance for furnishing water in West Knoxville, than in the territory composed of old and North Knoxville originally are you?

A. That is according to the schedule, some of them are higher and some of them lower; we charge according to the respective ordinances which determine those rates; that is to say, the town of West Knoxville under its contract with the Lonsdale-Beaumont Water Company and the ordinance of 1899, which is in the nature of a contract with the Knoxville Water Company.

Q. At any rate the rates are not uniform in West Knoxville with the other part of your territory here are they?

A. They are not under those limitations.

Q. And they are higher in many particulars are they not?

A. No sir, I would not say that.

757 Q. Did Wheeler & Parks find the North Knoxville plant a profitable investment?

A. I am unable to answer that question definitely: I understand your question refers to the period prior to this transfer or sale to the Knoxville Water Company.

Q. You have stated that North Knoxville from the initiation of the plant received its water supply from the Knoxville Water Company.

A. The water supply was derived from the works of the Knoxville Water Company, yes sir.

Q. Upon what terms Mr. Wheeler?

A. It is my present impression that prior to the sale of the North Knoxville plant to the Knoxville Water Company, and therefore during the time when high service hadn't been furnished, and consequently the hydrant rental hadn't become due and wasn't paid by the town of North Knoxville, that the works were run and managed by the Knoxville Water Company, and that in consideration thereof, they were permitted to receive the revenues.

Q. To receive what?

A. To collect and receive the revenues.

Q. Well that was between 1893 after the completion of the plant and 1891.

A. Yes sir it was in effect for about one or perhaps two years.

Q. And during that time the Knoxville Water Company run the North Knoxville plant for Wheeler & Parks for the revenue?

A. Yes sir they managed the plant for the revenues.

Q. That was the initial period?

A. Yes sir.

Q. Running over something like a year?

758 A. Something over one year and under two years I think.

Q. You mean two years after the completion of the plant in North Knoxville?.

A. The North Knoxville plant as near as I can recollect was completed towards the end of 1891, and was sold to the Knoxville Water Company late in 1893.

Q. During that period or a part of it you got no compensation from the city of North Knoxville for hydrant service?

A. Section 3 of the contract between Wheeler & Parks and North Knoxville provides: "The Water to be supplied under the contract hereby shall be from the Tennessee river or from other sources equally suitable, and shall be applied through the same system that supplies the city of Knoxville, or otherwise, as said grantees shall elect, etc." Also Section 10 provides "Grantees further agree that they will within a reasonable time, not exceeding three years after the granting and acceptance of this ordinance provide a high service system, and hereby agree that said system shall be capable of furnishing five streams of water from fire hydrants through 200 feet of hose and one inch nozzles thrown simultaneously to an average vertical height of not less than 40 feet, said streams to be taken from the five highest hydrants in the town of North Knoxville, and they

further agree that for all hydrants set under the provisions of this ordinance that do not indicate a pressure of 25 pounds or more per square inch as indicated by a pressure gauge, they will make no charge of rental for said hydrants, until said high service shall have been established." So that part of those hydrants did not entitle Wheeler & Parks or the Water Company to hydrant rental until after the sale to the Knoxville Water Company.

759 Q. Why Mr. Wheeler?

A. For the reason set out in the ordinance which I have just read; the fact being also that the limit of pressure required there was not afforded upon some of the hydrants until the high service plant was erected by the Knoxville Water Company in 1894 or 1895.

Q. Didn't the Knoxville Water Company have such pressure?

A. Not until after the contract made with Wheeler and Parks in 1893; the high pressure was provided by construction performed by Wheeler and Parks under that contract.

Q. I believe you stated awhile ago, and your answer was stricken out, that the hydrant service was a very material source of the North Knoxville Company's revenues, did you not?

A. It was to become so when it was fully earned.

Q. About how much per year was it to yield.

A. The number of hydrants provided for in the contract was 48 at $45.00 per hydrant, making $2,160 per annum.

The further taking of this deposition was adjourned until Saturday morning November 15th, 1902.

760 SATURDAY MORNING, *November 15th*, 1902—9.30 a. m.

Continuation of cross-examination by G. W. PICKLE:

Q. Mr. Wheeler, what is the difference between the highest altitude where water is carried in old Knoxville and in North Knoxville?

A. I do not think I can give you General Pickle a very close approximation as to levels. I can furnish them however, or Mr. Kimball can testify to them.

Q. It is considerably higher in North Knoxville than in old Knoxville, isn't it?

A. I would be unable to say absolutely whether there is any part of North Knoxville that is higher than our reservoir in East Knoxville; I think it is not.

Q. My question however is the difference between the highest point to which water is supplied from your reservoir in North Knoxville and in old Knoxville?

A. I wouldn't be able to assist you at present on that point. Mr. Kimball can furnish all data of that sort.

Q. Under the North Knoxville contract you were to furnish pressure for fire protection, were you not?

A. We were.

Q. How high is it provided by your contract that the water should be thrown from the highest point where you have a hydrant?

A. That is provided in Section 10 of the contract, which I read

and put in the record on yesterday. I will repeat it if you desire: "Grantees further agree that they will within a reasonable time not exceeding three years after the granting and acceptance of this ordinance, provide a high service system, and hereby agree that
761 said system shall be capable of furnishing five streams of water from the fire hydrants through 200 feet of hose and one nich nozzles thrown simultaneously to an average vertical height of not less than 40 feet; said streams to be taken from five highest hydrants in the town of North Knoxville."

Q. There was no such provision in the contract with old Knoxville, was there?

A. Not in express terms. The requirements as to pressure were determined however, physically by the locations which were fixed for the reservoir, and the sizes of the pipes supplying the hydrants. In one case a certain result was to be obtained; in another case a certain means was to be provided, the result of which was thereby determined.

Q. Old Knoxville had an equipment of fire engines, and the usual appliances for fighting fire?

A. I know nothing about what old Knoxville had when that contract was made.

Q. How was it in 1891 and 1894?

A. Knoxville had one fire engine I know at that time, but I am not familiar with the character of the apparatus.

Q. Had the Knoxville Water plant supplied Knoxville with water as it existed at the time you purchased it in 1891 up to that time?

A. Fire protection you mean?

Q. Yes sir, and other purposes.

A. Yes sir.

Q. It was not adequate to supply with that provision in the North Knoxville contract without change, was it?

A. I think so.

Q. Did you have the pressure?

A. I think we did. It is barely possible that there was a small point lying to the West of Gay street and East of the South-
762 ern Railroad which might have been above the level for which such a stream could be provided.

Q. Well that point was embraced in your contract, wasn't it?

A. Oh yes sir.

Q. How much in fact did you elevate your water level and reservoirs after taking North Knoxville in?

A. By means of the high service system do you mean?

Q. Yes sir.

A. About 80 to 85 feet at that time.

Q. What time did you complete that high service system and put it in operation in North Knoxville in full?

A. In 1894.

Q. Look to your contract with North Knoxville, and state whether or not it does not require filtered water?

A. It does within two years from the time the contract takes effect.

Q. Had Wheeler & Parks had any supervision, except through the Knoxville Water Company for furnishing water to North Knoxville for this high pressure, or for use?

A. We had the power, but we did not adopt any other system.

Q. Who constructed the North Knoxville plant?

A. Wheeler & Parks.

Q. Did you use contractors?

A. Sub-contractors you mean?

Q. Yes sir, sub-contractors?

A. No, we did not.

Q. How was it paid for?

A. It was paid for by Wheeler & Parks.

Q. In what way?

A. By cash.

Q. Cash?

A. By cash and service.

763 Q. Have you the books showing the actual cost of that plant?

A. Not the complete cost.

Q. You kept books though, didn't you.

A. We did.

Q. Where are they?

A. In my office in Boston.

Q. Will you produce those books showing the actual cost of that plant?

A. By order of the court I will, yes sir.

Q. Showing the cost of that plant?

A. I cannot show the actual cost of the plant by them.

Mr. CALDWELL: We except to the producing of the books by Wheeler & Parks, as the question is to the cost of the Knoxville Water Company.

COMMISSIONER: My impression is that for the present I will not require the production of the books, but he may be required to answer as to the actual cost.

Mr. PICKLE: We except to the ruling of the Commissioner on the ground that the witness has already put in an estimate of the cost of this North Knoxville plant; whereas, he has in his possession books showing the actual cost of the whole of it, or of many items, and the defendant is entitled to have this book produced in order to show the fact.

Q. Mr. Wheeler in the testimony you have given in this case, you have estimated the cost, haven't you?

A. Yes sir I have made the best estimate I am capable of making of what should have been the fair cost. I did this by my plans and the books I had before me.

Q. Mr. Wheeler you had those books in your possession at the time you made out that estimate?

A. I did.

Q. Did you examine them?

A. I did not.

764 Q. Then when the actual cost of those items in your possession were shown by your own books, why did you resort to estimates?

A. I have stated repeatedly that my books do not show the cost of those works by items, nor do they embody in any form the aggregate cost.

Q. Do they not show what you paid for specific items of machinery, materials, etc.?

A. They do for certain specific things.

Q. What things?

A. They would show, as near as I can recall, payment of bills for supplies that we purchased, the payment of cash forwarded by me for general pay-rolls, they would show payment made to cover vouchers coming into my office for general supplies, general services, of actual expenditures in Knoxville, or to those who sold supplies for creating that plant, but they do not relate in many respects to the specific items of cost per foot, or cost per unit in such a system as would result from any classification of the work. They do not embody any thing for the services of myself, as engineer or superintendent, any compensation as to contractors' profits, or the expenditures of my office in Boston incident to carrying on the work. They do embody cash payments made for general list of supplies, labor on pay-rolls and that sort of things.

Q. Have you not in your possession books or papers that show precisely what you paid for pipe for that North Knoxville work?

A. I have books or vouchers showing bills for pipe, but I could not say positively just what pipe went into the North Knoxville works, except by measuring up the pipes in the streets as I have done; it is not conclusive, in other words just what pipes are

765 in the streets.

Q. Is it not true that you paid the same price for piping of the same quality whether for use in Knoxville plant or for some other plant?

A. I could not say about that. It is not true that our piping bought in the same year was bought for the same price.

Q. I am not asking you that. The pipe that you bought at any particular time, whether it was for the Knoxville works or other works, was gotten at the same price by you, wasn't it?

A. On the same order, and on the same size of pipe, it was, but on different sizes it carried a different price.

Q. The prices in your estimate of machinery and pipes here are not the prices you actually paid, are they?

A. Not necessarily. In some cases they were lower and in some cases higher than the particular payments of that year.

Q. In what cases are they lower?

A. I could not say about that.

Q. On what basis in this whole statement have you estimated machinery and pipes?

A. Upon the basis of my best judgment as to the fair purchase price of the materials as of that time.

Q. What data did you have before you?

A. My general experience in the building of the works here and in this vicinity.

Q. Have you included in here the actual prices you paid in this vicinity?

A. I think I have answered that question as fully as I can state it.

766 Q. Did you include the actual prices you paid here?

A. I will ask the stenographer to read my previous answer.

Q. Are not the prices you list here the retail prices at which any one could have bought them?

A. They are not. I know of no list prices of that character. They are fair purchase prices to one who has a reasonable amount of credit in the eyes of the seller.

Q. Are they the prices that your books show you paid for piping?

A. I cannot answer that any more specifically than I have stated General Pickle. I think I have stated they were not necessarily. I have assumed in my analysis one price throughout the whole of every year, but that is not as I have stated, in conformity with all the prices actually paid throughout that same year so far as I recollect.

Q. When you had the prices actually paid, why did you have to make an estimate at all?

A. The making of an estimate of this sort is a very large work, and to have gone to the original vouchers in the first place would have entailed a very much greater amount of work, the result would have been far more confusing, not only in making the analysis, but submitting it in this hearing, and it would have been impossible to have related the price of every item covered by vouchers to that particular part of the supplies after its incorporation into the work. The only analysis of cost that could be made from the books would be certain summations of certain classes of expenditures under different ledger headings not related to the classifications according to the nature of the thing constructed. That, in addition to the

767 incompleteness of the final account as to covering all the costs, are the reasons that made it seem correct to me not to include them; although my belief is that the proper affirmative proof is to determine it as a matter of fair cost, as a matter of cross-examination I recognize other considerations.

Q. Do you not think that actual cost is better than estimated cost?

A. No, sir, I do not. If actual cost had been used, the book accounts could have been made, by the device of an ingenius bookkeeper, anything that might please the owner. It might have been very unwisely expended and imprudently designed. Certain actual costs, I have excluded from this testimony. The cost of the North Knoxville filter plant I have excluded, but it is on the books; the cost of the North Knoxville lands, bought for the North Knoxville plant, I have excluded from my estimate, but that appears on my books.

Q. You still own that land do you?

A. We still own the land.

Q. It never belonged to the Knoxville Water Company?

A. It did not, but it is on my books. I am dealing in other words with what the Knoxville Water Company acquired.

Q. But your books will show what you paid for your engine and pipes?

A. That has been covered two or three times in my answers. I do not think it necessary to re-affirm that.

Mr. PICKLE: Defendant calls upon witness again to submit that portion of his books of Wheeler & Parks relating to the construction of the North Knoxville Water plant to the inspection of
768 counsel, and asks the witness to produce copies of same, for his cross-examination.

Q. I believe you stated on yesterday that as soon as the water was turned on the North Knoxville plant, you turned it over to the management of the Knoxville Water Company, and that the Knoxville Water Company ran the plant for what was realized until 1893, when you transferred the property to the Knoxville Water Company, isn't that true?

A. At a certain time after the North Knoxville plant was under construction, or constructed, and arrangement was made by which the plant was operated by the Knoxville Water Company. If you want the particulars about that arrangement, I should have to look it up. There was a contract made, but I do not find it in this record of Directors' meetings. I will procure it if you desire.

Q. Please produce it.

A. (Witness refers to book.) I do not find any reference to that in "Stockholders' Record." There is in the Directors' Record a meeting of December 4th, 1891, referring to such a contract, which is on pages 11 and 13.

Q. Will you please file copy of such action as the Directors took in regard to the matter, and obtain and file copy of the contract?

A. I presume there is a copy of the contract somewhere in my files; if not, in the Treasurer's files, which will be furnished. The action of the Directors contained on pages 11 and 13 is as follows:

"The Committee appointed at the meeting of the Directors held December 22nd, 1891, to consider the matter of contract between the Knoxville Water Company and Wheeler & Parks, sub-
769 mitted the draft prepared by Wheeler & Parks and recommended the adoption of the same with the following amendment: That Section 2 be amended by inserting after the words 'for water delivered or sold by them' the following, 'provided, however, that in no year shall the revenue accruing to the party of the first part from water furnished in North Knoxville be less than $1950.00, the gross revenue now being received therein.'

"Voted: That the contract as amended which is as follows, be made, and that the President be authorized to execute the same in behalf of the Company.

(Contract omitted per vote of Directors June 15th, 1892.)

Voted: That the aforesaid contract be referred to the stockholders at their next meeting for ratification.

Voted: That pending the ratification of the above contract, the Superintendent of the Company be instructed to proceed as if the contract were ratified beginning on the 1st of January."

Q. This contract operated until the transfer of the property in 1893, I believe Mr. Wheeler?

A. I think it did.

Q. I believe from the statement in the action of the Board of Directors that the North Knoxville plant at the time of this action, or before the time of this action by the Board of Directors was yielding a gross revenue of $1950.00?

A. I will read what it says on that point: "The Committee appointed at the meeting of the Board of Directors held Decem-
770 ber 22nd, 1891, to consider the matter of contract between the Knoxville Water Company and Wheeler & Parks, submitted the draft prepared by Wheeler & Parks and recommended the adoption of the same with the following amendment: That Section 2 be amended by inserting after the words 'for water delivered or sold by them' the following "provided, however, that in no year shall the revenue accruing to the party of the first part from water furnished in North Knoxville be less than $1950.00, the gross revenue now being received therein.'

Q. How were the expenss of the two plants, I mean the operating expenses, borne from that date?

A. I should have to refer to the contract for that, as I have no recollection of it.

Q. Were they not all paid out of the Treasury of the Knoxville Water Company, and none by Wheeler & Parks?

A. I think that is true, but as a matter of fact I have no recollection about it.

Q. How about the additions to the North Knoxville plant, how were they paid for, did Wheeler & Parks pay for any after that date?

A. Wheeler & Parks did pay for additions after that date.

Q. What additions did you make after that date?

A. I recall now that the entire filter plant was constructed after that date. As a matter of inference I suppose we paid for all additions after that date.

Q. Wasn't the filter plant constructed under a contract between Wheeler & Parks and the Knoxville Water Company?

A. It was not. I am speaking now of the filter plant in North Knoxville.

Q. Then you put in a filter plant for North Knoxville, did
771 you?

A. We did.

Q. How long was it used?

A. I think between one and two years only.

Q. About what proportion of the income of the two companies combined from 1893 to 1894 was derived from the Knoxville Water Company, and what proportion from the North Knoxville plant?

A. I should have to refer you to the Treasurer for facts on that

line. I haven't undertaken to carry that in my mind. Of course, the expense of operating the North Knoxville plant in connection with the Knoxville Water Company plant incurred a very small additional expense. The expense of operating them independently would have been relatively large.

Q. Does it not require a greater service during the initiatory period of a plant than at a later period in proportion to the revenue derived?

A. In proportion to the revenue, yes, ordinarily that is true.

Q. The North Knoxville plant was relieved entirely by this arrangement about the expense of maintaining office, officers and any sort of force, were they not?

A. For local operations that is true.

Q. What were the expenses of operating the North Knoxville plant from 1891 to 1893 per annum?

A. I have no means of knowing. It was operated by the Knoxville Water Company.

Q. Do you know whether they were greater or less than the receipts?

772 A. I have no knowledge on that point, but they must have been much less than the receipts.

Q. So you think that the North Knoxville plant was self-sustaining from the years 1891 to 1893?

A. I have no doubt about that.

Q. Have you any knowledge now at all from the actual figures?

A. Well except as my judgment or memory is prompted by this record, no.

Q. You think that the North Knoxville plant could have been operated for less than $2,000.

A. Oh for a very small fraction of that in connection with the Knoxville works.

Q. How would it have been independently?

A. I think it could have been operated for less than that independently. Of course, that income you understand did not include the hydrant rental which had not then accrued.

Q. That is all of it?

A. None of it had at that time as a matter of fact. Hydrant rental began about August 15th, 1894, and was paid in full from that time onward.

Q. That, however, was after the expiration of this first arrangement, wasn't it.

A. Yes sir.

Q. Mr. Wheeler it sometimes happens that one Water Company has to furnish water to another, does it not?

A. It did happen there that one water company furnished water to another works.

Q. What would be a just price of course, in proportion to the quantities to be paid for by one Water Company to another for furnishing water to supply its works per thousand gallons?

773 A. Well that depends upon a great number of conditions, or all conditions that might enter into relations of parties and the physical character of the works, and the business

which they are doing. I cannot conceive of any intelligent answer to that question that would be specific.

Q. Can't you give some idea?

A. If you will give me the conditions, I will undertake to deal with them, but it would be folly to undertake to give an answer without stating the conditions.

Q. Well to come down to this specific case, and assume that the North Knoxville plant should be regarded as a customer and not as a part of the Knoxville Water Company, what would have been a just compensation per thousand gallons?

A. I am unable to answer that until I know what quantities of water were to be supplied, and what the duration of the service was likely to be.

Q. You know the conditions surrounding this particular transaction?

A. No sir, I don't carry them in my mind.

Q. You know the condition of this particular transaction; can't you give the value of such?

A. I think this contract is the best expression of my judgment as to the value. I think it was my best expression of judgment in view of all the circumstances.

Q. But Wheeler & Parks controlled the Knoxville Water Company and dealings with themselves in this instance?

A. I don't think that is a fair statement of the facts. I think Wheeler & Parks' relation to the Knoxville Water Company were that of reasonable consideration of the interest of the minority stock-holders as well as their own interest as stock-holders. There never has been any division of policy between the minority and
774 majority stock-holders in this company that I know of.

Q. Can't you give any estimate of the quantities?

A. I cannot unless you give particulars. I know of no one case which affords a fair basis of determining the supply of water in another case, and every case must be considered on its own conditions. In this particular case the Knoxville Water Company, I think, virtually paid for the privilege of receiving the income within the limitations of the contract—merely the prices of operating the works. I think that was a contract that was more to the benefit of the Knoxville Water Company than to the owners of the North Knoxville works.

COMMISSIONER: You mean this $1950 minimum amount?

A. Yes; in other words, as of that time the Knoxville Water Company had all there was in it, and Wheeler & Parks had nothing.

Q. Didn't your plant increase under the management of the Knoxville Water Company during the one or two years?

A. I presume it did, but I have no present recollection about it.

Q. You don't know how that is?

A. No sir. I have no facts in mind about that.

Q. Isn't it a fact Mr. Wheeler that the rights of way in all of the streets of old Knoxville and North Knoxville were donated to this Water plant?

A. I don't think that question could be answered affirmatively. Rights were given by ordinance in consideration of service.

775 Q. Then you think that the donation of the streets is part of the consideration for the service do you?

A. I think so; I think it all goes together.

Q. What were the rights-of-way in North Knoxville reasonably worth?

A. I have no means of knowing.

Q. What are they reasonably worth in old Knoxville?

A. I have no judgment on that unless you state your conditions.

Q. Well say in old Knoxville for a period of thirty years?

A. The conditions under which they are to be availed it might be a burden to use them.

Q. What securities of the Knoxville Water Company, or of Wheeler and Parks have ever been negotiated through brokers?

A. I can only answer for Wheeler & Parks.

Q. I mean for the Knoxville Water Company or for the company

A. I am not competent to testify as to securities that were issued prior to December 1890. Of the securities issued by the Company since then up to the date of this inquiry, the facts as to the notes and cash loans, the Treasurer could give. The stock received by Wheeler & Parks under their contract was sold by them both directly to the purchaser and in some cases, not through professional brokers, but through individuals who undertake to find a market for it. None of it was sold through professional brokers or bankers.

Q. How much and to whom have you paid commissions or brokerage for such service—I mean the Knoxville Water Company or Wheeler & Parks for the North Knoxville plant?

A. Wheeler & Parks, outside of the stock which they received, had nothing to do with the sale of the securities. As to what the company has done, I should have to refer you to the Treasurer.

776 The cost of the North Knoxville works, Wheeler & Parks provided that money out of their own resources, or out of personal loans. That never was represented by stock or bonds prior to its sale to the Knoxville Water Company for its stock, or as a part of the consideration under a contract for stock.

Q. So that Wheeler & Parks or the North Knoxville plant never had any securities that were negotiated, and therefore no commission or brokerage was paid?

A. Yes sir, all our stock was in the nature of such securities of the company, and the discount that they are subject to is primarily the difference between their face value and a fair construction value, and investment value of the property that the Knoxville Water Company acquired for that stock.

Q. I repeat then, Wheeler & Parks never paid a dollar to anybody as commissions or brokerage for negotiating any securities for the North Knoxville plant, did they?

A. Well you will have to define what you wish specifically. If you wish to have an answer that is specific,—the question must be regarded in an equally specific manner.

Q. Well I will ask you again, will you name the party to whom and the amount paid to him on account of commissions and brokerage for negotiating any securities of the North Knoxville plant?

A. I have stated to you that the North Knoxville plant was not made the basis of any independent securities, and no specific security can be identified with it by itself.

Q. It was paid for in cash or its equivalent?

A. I have so stated, by Wheeler & Parks.

Q. Now you have stated that you do not know as to the se-
777 curities of the Knoxville Water Company prior to the time that you became connected with it. Now is it not a fact that you have papers showing that these securities were never negotiated at all, but taken in part payment by the contractor who constructed the original works?

A. I have no original papers. I have no knowledge of papers bearing upon that point. I think I have seen somewhere copies of papers which bear upon that point, but in the absence of such papers I am unable to testify positively. I have already said here that I have the impression that I have seen a copy of the original contract between F. M. Lowry and the Knoxville Water Company for the construction of its works, but I do not find such paper here.

Q. If you have a copy, the original or a copy of the contract for the construction of the original plant of the Knoxville Water Company in 1881 to 1883, will you please produce it and file copy of same?

A. I shall be very glad to sir.

Q. Mr. Lowry the contractor was one of the stockholders and Directors in the original company?

A. I do not know anything about that sir.

Q. You stated on yesterday that the entire issue of stock over and above the original capitalization of $200,000 or $250,000 was made with perhaps small exceptions to Wheeler & Parks. I will ask you upon what consideration or considerations that stock was issued to you—for what reasons?

A. Upon the considerations named in the contract which I handed you this morning.

Q. Of what date Mr. Wheeler?

A. November 17th, 1893.

Q. All the issues were made upon that consideration of
778 preferred and common stock, were they?

A. With the general exceptions to which I referred yesterday and subject to two votes which were subsequently passed by the Directors of the Company modifying the terms of that contract. Of those votes one passed May 24th, 1894, and is as follows: "Voted: That the contractors be authorized to erect a vertical pumping engine instead of a horizontal one, and that they be allowed 25 shares each of preferred and common stock as compensation for the additional cost thereof." The other was passed November 22nd, 1894, and is as follows: "Voted: That the Treasurer be and he is hereby authorized to issue to Wm. Wheeler, successor to Wheeler & Parks, under their contract with this Company, preferred stock in lieu of common stock at the rate of one share of preferred to two shares of

common to an amount not exceeding 150 shares of preferred stock for three hundred shares of common stock." Subject to those exceptions and changes, the stock issued by the Knoxville Water Company to Wheeler & Parks, and to Wm. Wheeler as successor to Wheeler & Parks was for the consideration named in the contract of November 17th, 1893.

Q. You have stated that you have been President of the Company since 1896 or since 1897. What salary have you been allowed as President of the Company during that time?

A. Not one cent.

Q. You state that you have during that same period and prior thereto been supervising engineer. What compensation has been allowed you for that service; give it by years will you?

A. The compensation allowed Wheeler & Parks as supervising engineers has been that provided for under the following
779 votes of the Directors. At the meeting of September 11th, 1891 "Voted: That Wheeler & Parks be appointed Supervising Engineers, compensation to be fixed hereafter." At the meeting of the Directors held June 16th, 1892 "Voted: That Messrs. Wheeler & Parks be allowed and paid as compensation for their services as Supervising Engineers, and in recouping and organizing the works of this company as relates to construction, maintenance and operation thereof and matters pertinent thereto from December 1st, 1890 to June 1st, 1892 at the rate of $6,000. per annum." At a meeting of the Directors held June 29th, 1893 "Voted: That Messrs. Wheeler & Parks be allowed and paid as compensation for their services as Supervising Engineers and for other services in behalf of the Company from June 1st, 1892 to June 1st, 1893 the sum of $3,000 in addition to the actual expenses incurred by them." Under the contract between Wheeler & Parks and the Knoxville Water Company dated November 17th, 1893, it is provided under Section 7 in effect that Wheeler & Parks shall do all the engineering incident to designing, construction and improvements and make complete plans and construction records thereof in the necessary surveys. Then under paragraph 32 of that contract it is provided "and the said Wheeler & Parks further agree to give their services as Supervising Engineers to any extent that may be required in behalf of the said Water Company during the full term of this contract, and to give any assistance in their power for the promotion of the general interest and welfare of the said Company during said term without any further compensation than is specified herein, and they hereby waive all claims for personal compensation as supervising engineers of said company from June 1st, 1893 to the date hereof."
780 At a meeting of the Directors of May 24th, 1894 is the following: "Mr. Wm. Wheeler of the Supervising Engineers informed the Directors that the firm of Wheeler & Parks had been dissolved by mutual consent and that he had succeeded by purchase to Mr. Parks' interests therein, and to the duties and compensation of the office of Supervising Engineers to this and other companies formerly held by Wheeler & Parks." At a meeting of the Directors held February 28th, 1896, at which meeting I think I was first

elected President, the record states "At the suggestion and recommendation of the President, it was Voted: That the salary of the President be terminated from this date." "Voted: That Wm. Wheeler be and he is hereby appointed Supervising Engineer for this Company with the following duties and powers, to wit: He shall continue to make and cause to be made complete surveys, plans and tabular records of all extensions and improvements of the works of the Company, and shall direct and supervise the same. He shall have the care and custody of the aforesaid plans and records of the works, and shall cause to be entered therein from time to time the extensions, changes and improvements which shall be made during his service as supervising engineer. He shall make, or cause to be made through the proper officers or employees of the Company annually to the Directors, a report or reports showing the extensions, additions and alterations pertaining to the works during the preceding corporate year, and a summary of the statistics of operation and maintenance. Voted: That the salary of the Supervising Engineer be fixed at one per cent. of the gross earnings of each fiscal year, such compensation beginning January 1st, 1896 in addition to all expenses that may be incurred by him in the performance of his duties.

781 If I may be permitted to state by way of explanation as to the effect of the compensation paid to the supervising engineer under the vote last read, I will state that the compensation was fixed at a convention of the Directors of ten or a dozen or more Water Companies, at which certain percentages were agreed upon for the compensation of each Company of its supervising engineer, I being the supervising engineer of each of them, and the total consideration or compensation provided for by all of the Companies under that arrangement was made sufficient only to cover the expenses of the office and the office force that I would have to maintain to perform those services, and those office expenses and office force were not included in the expenses which the Companies were to pay in addition to the percentage of income provided for. So that the effect of all that was, that I received as compensation an amount sufficient only to reimburse me for the expenses of the office that would have to be maintained for doing the business of the companies and subtantially nothing for my personal services.

Q. How much did you receive under that last clause giving you one per cent. of the gross earnings?

A. I cannot tell you without going to my personal account books.

Q. I would like to have an answer; I want you to state the amounts received, and the dates you received such. Will not the books of the Company here in Knoxville show the amounts?

A. The books of the Company brought here from the Boston office would probably show it. That the Treasurer will be able to give you.

Q. You were representing ten companies?

A. More or less.

782 Q. Do you remember the gross amount you received from all of them?

A. No sir I have no clear impression of it. It was only enough to pay office expenses at that time.

Q. Well what are your office expenses?

A. I could not tell you sir.

Q. How do you make a living outside of this?

Mr. CALDWELL: We object to that as purely irrelevant.

WITNESS: I am perfectly willing to answer.

Mr. CALDWELL: But it is clearly not proper that you should be compelled to answer .

Mr. PICKLE: Then I withdraw the question.

Q. Mr. Wheeler I believe you stated heretofore that your first visit to Knoxville was in December, 1890?

A. In the fall of 1890.

Q. In the fall of 1890?

A. Yes sir.

Q. How long did you remain here at that time?

A. I think about two days; one or two days.

Q. How far do you live from Knoxville?

A. Upwards of a thousand miles by rail.

Q. There is where you maintain your office?

A. Yes sir.

Q. How frequently have you visited Knoxville since 1890 and how much of your time have you spent here?

A. Oh I am unable to say; comparatively a short amount of time; probably on an average once or twice a year I have come here.

783 My longest stay here was about three months in 1893; with that exception I think my longest stay has been a week or ten days—usually two or three days only at a time.

Q. You have a resident engineer in your employ here, hav'n't you?

A. No sir, not now. When our large construction was going on I had an assistant here in charge of the resident work.

Q. I mean that the Water Company has a resident engineer here?

A. They have a superintendent who was formerly my assistant during the work under my contracts here both in North Knoxville and under the contract with the Knoxville Water Company. He was afterwards appointed superintendent.

Q. Who is that?

A. Frank C. Kimball.

Q. How long has he been the superintendent of the Knoxville Water Company?

A. I am unable to say when he was appointed. He was superintendent in 1899. That is the earliest reference to him I find in the Directors' records.

Q. Was he not appointed several years before that, and has he not been serving the Company?

A. He may have been a year or more before that.

Q. He is a capable and efficient engineer?

A. As a constructing engineer he is a capable assistant. He

never has had experience as a designing engineer or consulting engineer.

Q. He was your assistant during the construction of the works provided for by the contract of November, 1893, I believe you say?

784 A. He was my local representative.

Q. With the exception of the three months you say you were here, he was in personal charge of the work, wasn't he?

A. My presence here in 1893 was prior to the making of that contract.

Q. Well the two or three months you spent here in 1893 was in reference to the Knoxville Water plant?

A. It was in reference to negotiations with the city for an ordinance primarily to enlarge our powers for bonding our property so we could raise money for the improvements.

Q. You were not here performing any services as supervising engineer at that time?

A. No sir, except in anticipation looking over the ground preparatory to making improvements later.

Q. How much time have you spent here as supervising engineer looking after construction work?

A. My services as supervising engineer are chiefly spent in Boston. The longest period I have spent here I have already stated to you.

Q. Excepting the three months?

A. I was here then as supervising engineer. I was in effect the manager of the company during the whole of this period so far as the negotiations for improvements, the systematizing of its business, the fixing of its rates, rules and regulations, the planning of its improvements and extensions from time to time.

Q. Mr. Kimball was in personal charge of the work you did here, was he not?

A. He was resident engineer as I have told you, carrying

785 out plans, instructions, specifications and contracts which had to be administered here.

Q. What compensation did he receive from you while in the performance of the North Knoxville work?

A. I am unable to say definitely, but I think about $100.00 per month at that time. He was employed by me upon many works, this in conjunction with others.

Q. And you paid him about $1200.00 a year?

A. I would not undertake to say. I have paid him at different times from $60.00 upwards. I think his salary when he left my employ was upwards of $100.00 per month—perhaps $125.00 or $130.00.

Q. How many other works was he engaged on with you?

A. He has been engaged upon ten or a dozen other works at different times.

Q. Was he engaged on others concurrently with the North Knoxville erection?

A. I am unable to say at present; probably not to any material extent.

Q. Over how long a period did his services in the erection of that plant over there extend?

A. Probably the greater part of the working season of 1891, and portions of the succeeding years until the filter plant was completed and the work sold to the Knoxville Water Company.

Q. About how many months?

A. I cannot tell you any more specifically than I have.

Q. Where was he during the remainder of those years?

A. I could not tell you without looking up his time book.

786 Q. And he has been for some years the general manager and *and* resident engineer of the Water Company?

A. No sir, he has been superintendent of the Knoxville Water Company. He has not been supervising engineer except as through his position as superintendent and competency as an engineer he has administered construction entrusted to him.

Q. He performed the duties as superintendent and resident engineer as well?

A. Virtually so.

Q. What salary has the Company paid him, and does it pay him for performing those duties?

A. I can only tell you approximately. I think his salary has ranged from $125.00 to $200.00 per month, within the time of this inquiry from $125.00 to $150.00 a month, or possibly $166.00.

Q. When was it increased to $200.00?

A. Since March 31st. 1901. This is hearsay on my part. I have no knowledge from the actual records of payments made to him.

Q. What ever engineering work has been done, has been done by him as a resident engineer?

A. No, there has been much work that has been done but not done by him as resident engineer. I do not know what you mean by a resident engineer.

Q. I cannot make it plainer?

A. If you will define it I will tell you.

Q. Who has done any work here as resident engineer except Mr. Kimball since his connection?

A. The services by a resident engineer have been done by Mr. Kimball.

787 Q. How long after March 31st. 1901 was his salary increased?

A. I am unable to tell you.

Q. It stands at $200.00 now does it?

A. I understand it does; I am not a competent witness upon that fact.

Q. I will ask you to state precisely what constituted the North Knoxville plant at the date of its transfer to the Knoxville Water Company in November, 1893, and give the actual cost of the construction of the same?

A. I am unable to answer that question as to the cost of construction.

Q. Can you not state what constituted the plant at that time?

A. The property conveyed to the Knoxville Water Company in and pertaining to the North Knoxville works under the contract of November 17th, 1893, is set out in Section 1, paragraphs 1, 2, 3, and 4 of said contract, in schedule Exhibit "A" annexed to said contract, and in a deed of sale and assignment of November 17th, 1893, from Wheeler & Parks to the Knoxville Water Company. I will read those as far as I have them, and will get the assignment and read that as an answer to further details.

Q. Have you a schedule of the property as it existed at that date; if so, please make it a part of your deposition.

A. I have a schedule, Exhibit "A" to contract between the Knoxville Water Company and Wheeler & Parks made November 17th, 1893 and also a deed of sale and assignment of same date from Wheeler & Parks to said Company, said schedule being as follows:

788 EXHIBIT "A"

To Contract between Knoxville Water Company and Wheeler & Parks, made November 17th, 1893; also to Deed of Sale and Assignment, of Same Date, from Wheeler & Parks to said Company.

SCHEDULE of Pipes, Valves, and Hydrants Transferred from Wheeler & Parks to Knoxville Water Company under said Contract and by Deed of Even Date Herewith.

In.	Location by Streets. From—	To—	Length in ft.	Diam. in in.
No. Fifth Av.....	Knox. Corp. Line....	Wells.....	571.	12
Wells.....	No. Fifth Av.....	Sixth Av.....	391.9	12
Sixth Av.....	Wells.....	Washington Av.....	510.7	12
			1473.6	.....
Washington Av....	Corp. Line.....	Sixth Av.....	375.	10
Sixth Av.....	Washington Av.....	Grainger.....	1606 2	10
Coleman.....	Luttrell.....	Folsom.....	1664.3	10
Folsom.....	Coleman.....	Dead End	254.5	10
Standpipe con.	Folsom.....	10" Gate at property line	15.	10
			3915.	.....
Sixth Av.....	Grainger.....	Gillespie.....	280.6	8
Grainger.....	Sixth Av.....	Broad.....	1765.2	8
Broad	Bluff.....	Junc. 6" pipe	1932.	8
Broad	Silver and 6" pipe...	Knox. Corp. Line...	1306.9	8
Gill.....	Broad	Luttrell.....	702.	8
Central Av.....	Knox. Corp. Line...	P. E. above Scott....	3274.6	8
			9261.3	.....
No. Third Av.....	Knox. Corp. Line...	D. E. Northerly.....	806.6	6
Caswell.....	No. Third Ave.....	No. Fourth Av.....	361.	6
No. — Fourth Av...	Knox. Corp. Line...	D. E. Northerly.....	540.1	6
Bluff.....	Broad	D. E. Westerly.....	449.6	6
Thompson Place ...	Broad	Armstrong Av.....	423.4	6
Luttrell.....	Gill	Caswell.....	591.1	6

In—	Location by streets. From—	To—	Length in ft.	Diam. in in.
Gratz	Lovenia	D. E. Northerly. No. of Wells	706.5	6
Broad	Silver	Junc. 8″ pipe	1647.5	6
Wells	Broad	Luttrell	606.2	6
Dewey	Coleman	Kenyon	453.6	6
Coleman	Folsom	Scott	410.5	6
Scott	Coleman	Laura	336.1	6
Folsom	Coleman	Armstrong	1431.9	
789 Brought forward			8764.1	6
Laura	Folsom	Armstrong	511.1	6
Anderson	Folsom	Cornelia	666.7	6
Cornelia	Anderson	Brookside Av	354.6	6
Scott	Central Av.	D. E. Easterly	169.	6
Baxter	Wray	Stewart	1414.1	6
Damaron	Central Av.	Wray	801.4	6
Munson	Central Av.	Jacksborough	1405.2	6
Holston	Munson	Pruett	306.2	6
Pearl Place	Central Av.	Alexander	349.5	6
Alexander	Pearl Place	Gill	209.1	6
Gill	Alexander	Broad	675.4	6
Erwin Ave.	Gill	Hazel Place	171.5	6
Gill	Luttrell	Knox. Corp. Line	384.	6
			16181.9	
Wray	Munson	D. E. Northerly	193.	4
	Hydrant connections.		779.3	4
	Blow-off		6.8	4
			979.1	
Lovenia	Gratz	East to 3″ pipe	58 8	3½
Lovenia	Junc. 3½″ pipe	Luttrell	300.	3
Kenyon	Broad	Junc. 2″ pipe	414.2	2½
Kenyon	Junc. 2½″ pipe	D. E. Westerly	397.8	2
Armstrong Av.	Kenyon	D. E. Northerly	841.	2
Gratz	Junc 6″ pipe	Lovenia	55.4	2
Deery	Lovenia	Knox. Copr. Line	163.	2
Lovenia	Luttrell	Knox. Corp. Line	32.	2
Luttrell	Junc. 6″ pipe	Junc 1½″ pipe	26.3	2
Sixth Av.	Filter House	E. B. Mann's Res.	349.	2
No. Fourth Av.	Junc. 6″ pipe	D. E. North	94.6	2
Jennings	Central Av.	D. E. Westerly	139.8	2
Fulton	Central Av.	Dead End	229.9	2
			2328.8	
Luttrell	Junc. 2″ pipe	D. E. North	214.3	1½
Church Place	Broad	D. E. West	266.	1½
			480.3	
Hazel Place	Irwin Av.	D. E. West	221.9	1½
Gratz	Lovenia	D. E. South	243.	1½
Luttrell	Lovenia	D. E. North	172.3	1½
Elenoir	Gill	Knox. Corp. Line	60.	1½
			697.2	

790 Total amounts of pipe..... 1473.6 ft. of 12-inch
3915.0 10-inch
9261.3 8-inch
16181.9 6-inch
979.1 4-inch
58.8 3½-inch
300. 3-inch
416.2 2½-inch
2328.8 2-inch
480.3 1½-inch
697.2 1¼-inch

Together with all hydrants (48 in number) and gates and gate boxes connected therewith. Said gates comprising the following:

One (1) 12-inch
Six (6)..... 10-inch
Nine (9)..... 8-inch
Twenty-two (22)..... 6-inch
One (1) 4-inch
One (1) 3½-inch
Seven (7)..... 2-inch
One (1) 1½-inch
Three (3)..... 1¼-inch

THE KNOXVILLE WATER CO.,
By LUCIUS H. FULLER, *Pres.*
ELBERT WHEELER, *Treasurer.*
WHEELER & PARKS.

791 A. That schedule does not cover all the physical plant, however, that was conveyed.

Q. What else was conveyed as physical property?

A. A certain lot of land extending from Coleman Avenue to Folsom Street, containing abcut 11,943 square feet; also certain supplies, stock and materials left over from the construction of the works. What they were specifically I am unable to state now.

Q. What was the cost to the Knoxville Water Company of the lot of land you put in there?

A. I am unable to state now. I will get it for you, however, if you wish. It has not been valued by me in this case, however.

Q. What was the price paid by you for the twelve inch piping put in in North Knoxville?

A. I am unable to state.

Q. For the ten inch piping?

A. I am unable to state.

Q. The eight inch piping?

A. Same answer.

Q. The six inch piping?

A. The same answer.

Q. For the four inch piping.

A. Same answer.

Q. And other dimensions.

A. Same answer.

Q. At what time was it that connection was made between the Knoxville Water Company's supply and the North Knoxville plant.

A. To the best of my recollection in the year 1891.

Q. What changes of the two plants were made necessary to accomplish this result.

A. The main supply of the North Knoxville works was furnished during the first year of the operation of the North Knoxville works through the street mains then existing of the Knoxville Water Company which led to North Knoxville.

792 Q. What had to be done in order to effect this connection, and what had to be expended by each plant for that purpose?

A. Why the North Knoxville pipes were laid in the streets of North Knoxville in connection with the pipes of the Knoxville Water Company running into North Knoxville. I think that certain pipes in Knoxville were enlarged also by Wheeler and Parks to afford a freer supply to their pipes in North Knoxville. The details of that I am unable to furnish you without going to the field note books. That however, does not enter into the list of the pipes that are contained in the schedule which I have just put in.

Q. What was the extent of the changing of these pipes?

A. I am unable to give you any definite information upon that.

Q. Well after the contract of 1893, what was necessary to be done, and what was done in the way of additions or extensions or changes of the Knoxville Water plant in order to get the high pressure in North Knoxville?

A. The North Knoxville Works were then connected with the high service works built at about that time for the Knoxville Water Company through new water mains in what was then the Tenth Ward of Knoxville, from and through Mabry street, Bertrand street and Washington Avenue. Through that main high service was afforded in the higher parts of North Knoxville, and the high service was separated from the lower service in North Knoxville by means of pipe gates set in the mains in North Knoxville.

Q. You answer thus far only as to the pipes—what other changes were made with the reservoir or engine house?

A. No reservoir or engine house was built in North Knox-
793 ville, or in direct connection with that works. The Knoxville high service, as I say was erected about this same time and that consisted of pumping engine, boiler and the houses, foundations, the stand-pipe and the pipes and appurtenances connecting these various works with the Knoxville system and with its open reservoir. That high service was extended later, I think, but not during the time of this contract to certain portions of Knoxville particularly on the upper parts of Reservoir Hill.

Q. Originally this high service extended only to North Knoxville then?

A. I think that is true originally; I am not quite sure about it.

Q. Did it not become necessary for you to raise your water level in order to get that pressure at that time by change of your reservoir?

A. We made no change of the reservoir——

Q. Or stand-pipe.

A. —that is the nature of the high service, viz: by raising the water by means of the pump and stand-pipe to which I have referred.

Q. Will you in a single table show the cost of instituting this high service, giving the items and cost of them?

A. I have done so to the best of my ability.

Q. Separating the high service from other work; have you done it that way?

A. I will endeavor to pick out the items if they do not now so appear.

Q. I wish you would do that?

A. But the difficulty about that is I doubt very much whether I will be able to do that.

Q. Are there not a number of items that pertains solely to this high service?

794 A. There is no part of the plant which is used for furnishing water to consumers under the high service alone, but there are certain parts which are used almost exclusively in that way. The parts that I think of are the stand-pipe and high service pumping engine—I think of nothing else—but that high service is used, as stated, for the operation of the filter plant and the cleaning of it; but for that it would be necessary to introduce a special pump to operate in cleaning the filters.

Q. And wasn't the expenses of the building and other portions of the system pertaining to the high service and filter plant, incurred jointly on account of both?

A. Yes, sir.

Q. How long was this high service used exclusively for the benefit of North Knoxville?

A. I am not able to say positively that for any time it was used exclusively for North Knoxville. Mr. Kimball could give you those facts better than I.

Q. How long since it was turned on the old city of Knoxville or has it been turned on at all?

A. Yes, sir, it has been turned on, but I am unable to state how long.

Q. Is it kept on for the use of the entire city or not?

A. Not for the entire city it is not.

Q. For what part of the city?

A. It is on Reservoir Hill in East Knoxville; it is on the main running over to the Tenth Ward and through that as I have stated to North Knoxville; it is on a large main coming from the stand-pipe down through the center of the old city crossing Gay Street and running over to West Knoxville.

Q. This main that runs across Gay Street to West Knoxville is for the benefit of West Knoxville?

795 A. Primarily so in its present use; but is intended ultimately for whatever further use may be desired of it. It was originally laid anticipating a possible future use for other purposes. For instance it is a larger main from the reservoir to Gay street,

than it is to its further prolongation to the west. It was built in view of future contingencies and possibilities.

Q. What future uses do you contemplate Mr. Wheeler?

A. Oh, the possibility of higher service in some other higher points in Knoxville and of future arrangement being made for its more extensive use for fire protection.

Q. Have you approached the mayor and aldermen of Knoxville with reference to its use in that particular?

A. I think communications have been passed—I forget upon whose initiation—between the company and officers of the city.

Q. Between whom?

A. I am unable to give you details at present.

Q. Had the City Council ever taken any action upon it?

A. I do not know. Nothing has resulted from that yet.

Q. You didn't acquire the West Knoxville plant for several years after instituting this plant did you?

A. No, sir, not the Lonsdale-Beaumont plant we did not.

Q. Were you contemplating that at the time this plant was put up?

A. I think we contemplated a possibility that at some time there might be a consolidation, although there was nothing definite about it; in fact we had no grounds for such expectations at that time. Provisions for such high service had been made in certain ordinances, and were passed by the city council but failed to be approved
796 by the Mayor. Such action we took as an intimation of what might ultimately be desired in the future.

Q. That is the city had refused to take the high service?

A. The Mayor had vetoed the ordinance after the city council had passed such an ordinance.

Q. When was it that such ordinances were passed by the city council and vetoed by the Mayor?

A. In the Spring of 1891 and in the Spring of 1893.

Q. And this filter plant was erected after 1893?

A. Yes, it was provided for by the Wheeler and Parks contract of 1893.

Q. This provision for filter and high pressure—I mean for the erection of the plant was made between the water company and Wheeler and Parks by this contract of 1893 conveying the North Knoxville Works to the Knoxville Water Company wasn't it?

A. It was provided for in the same contract, yes.

Q. You have referred to that contract in connection with your services as Supervising Engineer. You served as Supervising Engineer for the Knoxville Water Company and also superintended the works for Wheeler and Parks at the same time?

A. Wheeler and Parks were appointed Supervising Engineers for the Knoxville Water Company while they were building the works in North Knoxville.

Q. Well, Wheeler and Parks were the contractors to build these works for the Knoxville Water Company and at the same time Supervising Engineers for the Knoxville Water Company superintending the work were they?

A. Yes, we contracted to render services as Supervising Engineers for the Knoxville Water Company at the same time.

Q. So you represented yourselves as well as the Company
797 in the matter?

A. We served the Company in so far as we were carrying out our contract. There was no fictitious arrangement that any body assumed that we were watching ourselves, if that is what you mean to say.

Q. The Water Company had no other person than the contractors looking over the work during that period, had they?

A. No, I think not in any supervisory capacity.

Q. Well, whether you had represented the Company or not you would have had to have given your attention to this work, wouldn't you?

A. Oh, yes. We agreed to do certain specific things as Supervising Engineers which would not have been required had no reference to that consideration appeared in the contract.

Q. I notice Mr. Wheeler, that under the head of "Plant and Improvements at River Station" pages 23 and 24 of the record, supposed to have been constructed in 1883, you estimate 1475 cubic yards of rock excavation at $1.87½ a yard. What do you know about the quantity of rock excavation?

A. I had made surveys of the pumping station property and soundings which located the surface of the rocks underneath the overlying soil, and also had surveys, plans and dimensions of the building and of the engine pit and of the face of the rock as it had been excavated behind the engine house, coal shed and boiler house, which afforded the data necessary in making a close estimate of the probable amount of rock that had been excavated, and from that data I computed the amount of the rock excavation.

Q. What was the size of that pit?

A. Which pit do you refer to now?

Q. The one you are speaking of where the engine house is?

798 A. Well if you mean the general rock excavation, of course it was most irregular in form in every direction—that wouldn't be capable of defining in words, but the engine pit itself was excavated to make room for the walls which now line it, 25 or 30 feet wide, from 35 to 40 feet long and 25 feet deep more or less.

Q. You hadn't seen the surface and know nothing about this except what you have stated from the condition of affairs now?

A. I stated that I had surveys and soundings made to discover the depth of the rock, and then levels taken showing the surfaces of the faces left of the excavations behind the engine house, such measurements as would afford a close estimate of the amount of rock excavated.

Q. Do you know anything about the amount of prices paid by other people at Knoxville at that time?

A. No sir I wouldn't be able to testify to a single pavement. I have a judgment about it, but as I understand you desire an actual knowledge of payments.

Q. Mr. Wheeler on page 29 of the record, taking an item at ran-

dom I find this item under the head of "pumping machinery and appurtenances" Davidson single direct acting air pumps and condensers, each having 8 inches in steam and 12 inch water or vacuum cylinders, with 12 inch stroke; also one Davidson feed pump with five and one half inch steam cylinders 3¼ inch water cylinder and 8 inch stroke, estimated cost f. o. b. cars Knoxville, $10,000" I will ask you if you know what was the actual cost of this machinery?

A. I do not.

Q. You do not know what was paid for it by the Water Company from any papers in your possession?

799 A. No sir I do not.

Q. Mr. Wheeler, since 1893, has the properties of the Knoxville Water Company and North Knoxville been assessed jointly for taxation?

A. I do not know sir.

Q. Well is the Patton and Coleman Street property in North Knoxville; I will ask you to examine Exhibit attached to schedule "B" made exhibit "2" to the Answer in this case and state whether or not it does embrace the property of both Companies?

A. I find in this sheet to which you call my attention: 3rd: "Lot on Coleman Street in the 11th ward."

Q. Then it does appear to be assessed for taxation jointly from said exhibit?

A. I don't know the significance of that document; I have no knowledge of what it is—it is on that list of property.

Q. I will now ask Mr. Wheeler if the properties of the Knoxville Water Company, including those of North Knoxville of which Company you are President, has not been assessed in Knoxville and Knox County, State of Tennessee for taxation for the following years:

For 1896	at	$150,000.00
For 1897	"	160,000.00
For 1898	"	165,000.00
For 1899	"	165,000.00
For 1900	"	200,000.00
For 1901	"	275,000.00

If you do not know the fact personally, I will ask you to examine Exhibit #8 to the Answer, and state if it is not shown by the certificate of the Recorder of the City of Knoxville to have been

800 so assessed.

A. Exhibit No. 8 to the answer purported to be signed by C. C. Nelson, Recorder, and John A. McMillan, Comptroller of the City of Knoxville, appears to show but personally I am not familiar with the fact.

Q. Now Mr. Wheeler has not your Company through its agents and attorneys appeared before the assessors and Board of equalization both at Knoxville and Nashville and resisted every one of these assessments as being too high?

A. I am unable to asay from my official knowledge but it is our policy to keep our taxes as low as we can properly do.

Q. Mr. Wheeler do you not think that all the elements that enter

into the valuation of property for the purpose of finding reasonable water rates to be paid by the citizens of Knoxville, should likewise enter unto a valuation for taxation?

Mr. CALDWELL: In so far as it is intended or calculated to fix the tax rates upon the property, the question is entirely improper; it is in effect an investigation of the other question.

A. In answering that question my general views on that subject I have already testified. I think most of the elements as I then stated which enter into the consideration of rate cases and sale cases should be taken into account in a tax case. There are considerations fixing fair taxable value which have not been alluded to and do not enter into a rate case. If desired I will be glad to state them if it is proper. Moreover, there are considerations of value entitled to be satisfied out of earnings to which I have testified here, that are not
801 appropriately subject to tax. For instance, as bearing upon the first point, a fair tax value is determined somewhat in the manner by which other property is taxed, so that each property may contribute its pro rata part of the general tax levy. That seems to me to be the most important consideration that enters into the taxable value, to which I have heretofore made no allusion; services of administration and promoters' services, also discounts or expenses for floating bonds and other securities—allowances for necessary renewals, and depreciation of plant, these and any other elements of value yet remaining to be satisfied from earnings are a demand upon future rates. They operate however to diminish the valuation in the hands of the municipality on which to levy future taxes, because, it is a vacuum of deficiency and not an element of material present value. So I say they are to be taken into account and considered according to their nature and bearing in respect to the particular cases under consideration.

Q. Do you contend that you are entitled to fix rates on a value beyond a reasonable and fair value of your property?

A. Not beyond a reasonable and fair invested value of the property—I am not claiming that so far.

Q. What do you mean by "Investment value?"

A. A fair return for capital and services that have been prudently and legitimately required for the creation and development of the plant, that return to have been afforded for so long a time as such services and capital have contributed to make up the plant.

Q. And that regardless of whether the plant is actually worth that amount of money for taxable or sale purposes?

A. Yes sir, so long as it was prudently and needfully expended.

Q. Now I will ask you Mr. Wheeler if it is not a fact that the taxes of this Company were paid by the City for several years
802 after the inception of the operations of this Company.

A. I do not know about that. I think that the matter was under litigation and disposed of before I was connected with the works.

Q. Isn't it a fact that it appears in the contract of the Knoxville Water Company?

A. I think it was, but that was a matter that had been litigated

before I became connected with the Company, and how it was finally settled I do not know.

The further taking of this deposition was adjourned until 9.30 o'clock Monday morning, Nov. 17th, 1902.

803 MONDAY MORNING, *November 17th*, 1902—9:30 a. m.

Cross-examination of WM. WHEELER resumed:

Q. Mr. Wheeler in several places in your deposition I notice charges for additional services. I wish you would explain precisely what you mean by a service and putting it in?

A. Well, generally speaking the service pipes and appurtenances referred to by me have reference to the connection between the street mains and the taker or consumer, and all appurtenances connected with them for controlling the supply to that taker or consumer excepting of course meters.

Q. In other words it is the means of connection between the water pipes of the company and the consumer's residence or other place of consumption?

A. Yes sir.

Q. They are put in at the cost of the consumer, are they not?

A. No sir not at present. They have been put in in different ways. The manner in which they have been charged for according to my assumption in this analysis, is stated in each case where I have referred to their installation.

Q. They are the services or connection provided for in Section "7" of the contract between the city of Knoxville and the Water Company, dated June 30th, 1882. Said provision is in the words following: "Said Company will supply private consumers with water at a rate not exceeding five cents per one hundred gallons provided however, which is expressly understood that the entire cost of introducing from the mains into private premises, including cost of meter when used shall be borne by the parties introducing or
804 ordering same, and that no main or distributing pipe shall be tapped by any person except a plumber licensed by said Company?

A. No sir not to any material extent; in other words very few services indeed were ever put in by reason of that limitation of that section of the contract which you have read.

Q. How many services had the Knoxville Water Company when you went into the control of it in 1891?

A. The number of services in use in December 1890, I have no present means of knowing. The first approximation that I have made and used as to the number of services, was as of December the 31st, 1901, a little more than a year afterwards.

Q. What number had the Company at that time?

A. I have assumed that they had approximately about 1800.

Q. These were inside—wholly inside the limits of the old city of Knoxville, were they?

A. So far as I know that approximation relates to all the services

supplied by the Company at that time, whether inside or outside the corporate limits of that time or of this time.

Q. How many were inside the old city of Knoxville and how many outside?

A. I am unable to divide them.

Q. What other territory than the old city were you occupying at that time?

A. Do you refer to the old city as its boundaries existed at that time?

805 Q. Yes sir.

A. I don't think I can answer that from any information that I have at present. I am unable to divide the pipe as of that time as between territory within and territory without the municipal lines. I am not certain what the municipal lines were at that time, and if I were, don't think I could answer your question with my information at present.

Q. Were you supplying any services in North Knoxville at that time?

A. I hav-n't specific data here, but I have the impression that there were a few pipes within the limits of North Knoxville when we came into an interest into the property supplied by the Knoxville Water Company. There were certainly some pipes in North Knoxville Prior to the contract of Wheeler and Parks with the Knoxville Water Company, and I think prior to the construction of the pipe system in North Knoxville by Wheeler and Parks, but to what extent and to what amounts I am unable to say.

Q. The number of services in North Knoxville at that time wasn't large?

A. I am unable to give you any figures specific or relative.

Q. Have you any means of ascertaining the number?

A. I don't know whether the old records of the Company which came down to us would show that or not. I personally have no means—have no knowledge or data on that point.

Q. How were the services put in regarding the expense of putting them in prior to the time you came in control of the Company in 1891?

A. I have assumed that they were laid originally and prior to the time of which you speak without direct construction expense
806 to the Company and hence have not included them in construction costs.

Q. Have they all been put in at the expense of the Company since that time?

A. Not all I think.

Q. What number have been put in at the expense of the company and what number at the expense of the consumers at that time?

A. For positive testimony on that point I am unable to give it to you. I think the Superintendent can supply it if you desire it. The basis of my assumptions appear in the record, and those assumptions were made after conference with the Superintendent on that point.

Q. You have adopted those assumptions without any personal knowledge of the facts then?

A. That is not correct. I had some knowledge of the facts and general policy from time to time, but the specific dates and the specific number of services I had not in my mind nor in my office. In other words my asumptions are based upon the best information that was obtainable by me.

Q. You stated on page "42" of your examination in chief that 160 additional services were put in in 1893 and 1894—that is from March the 31st, 1893 to March the 31st, 1894 at an expense of $1280. Had you the data from which you take that?

A. That number of services was sent me by the Superintendent. The cost per service, $8.00 is my estimate of the fair reasonable cost of doing the work. The Superintendent would have a record of the number of services put in, in his files.

807 Q. Well were these not put in without direct cost to the Company?

A. I have so assumed and so understood.

Q. Look to page 50 of your examination in chief. I find there this item "for services put in for the years 1894, 1895 to wit, about 130 additional services at $8.00, $1040."

A. The transcript that went into the record as I handed it to the stenographer was different in some respects. The number of services referred to was as stated by you, and in that case I likewise assumed that they were laid without direct cost to the Company, and did not include that amount in construction of cost.

Q. And is it not true of the 250 services for which there is a charge of $2000.00 on page 67 of the record for the years 1895 and 1896; and of the charge of $2160.00 for 270 services for the years 1896 and 1897 as shown on page 73 of your examination in chief; under the charge of $2520. for 315 additional services for the years 1897 and 1898 on page 77 of your examination in chief; under the charge of $1664 for 208 additional services for the year ending March 31st. 1900, and of the charge of $3384. for 423 additional services for the year 1899, 1900 on page 87 of your examination in chief and of the charge of $3416 for 427 additional services for the years 1900 and 1901. Were not all of those services put in at the expense of the consumers?

A. No that is not true.

Q. Well what are the facts in regard to these services then?

A. The facts to the best of my knowledge and information are in accordance with the statements made in my direct examination, to wit, that during the year ending March 31st. 1896 the number of additional services laid was about 250, the fair value or

808 cost of which at $8.00, $2000. The Company laid services during that time for a payment by the taker of $5.00 making a deduction of $1250.00 leaving as the fair net cost of such services to the Company $750.00 to which I have added the customary 20%, $150.00 making for that year a total addition to the fair construction of the works $900.00 in lieu of the $2000. presented in your inquiry.

During the year ending March 31st. 1898 in like manner the additional number of services laid was about 270 at $8.00, $2160.00 of which the taker repaid $5.00 each, $1350. leaving as the fair net cost of those services entering into construction cost $810.00. Adding the 21% $162. makes the total carried to the fair construction cost as I have it, $972. in lieu of the $2160 presented by your inquiry.

In like manner the number of additional service pipes and appurtenances laid during the year ending March 31st. 1899 was about 315, which at $8.00 equals $2,520.00. Of that amount I have deducted $5.00 for each service contributed by the consumer, $1,575.00 leaving as the fair net cost of those services $945.00 and adding 20% makes total net cost $1134.00 in lieu of $2,250 as presented in your question. Likewise for the year ending March 31st. 1900 the additional number of services was 208 at $8.00 equals $1664.00. From that is deducted $5.00 received on each service from the consumer, $1040.00 leaving as the fair net cost $624.00 to which add 20%, $124.80 makes a total of $748.80 added to the fair value of the works in lieu of $1664.00 mentioned in your inquiry.

The 443 additional services referred to in your inquiry as laid to March 31st. 1900 was the number supplied through the Lonsdale Beaumont Works at that time, and the cost thereof estimated at $8.00 per service $3384. is assumed to have been paid by the takers and had not entered into the construction account.

809

The 427 additional services laid in the year ending March 31st, 1901, as I stated in my direct testimony were laid free of all expense to the customers, being laid by the Company. The estimated cost at $8.00 equals $3416.00, adding 20%, $683.20 makes a total of $4,099.20, and all of this amount enters into the fair construction cost of the plant.

Q. These services were all put in by the regular force of the Company under the superintendence of the resident engineer and other officers here, were they not?

A. Your questions refer to all services from the beginning down to the present time?

Q. Yes sir.

A. I am informed that is not the case. From my personal knowledge I cannot testify, but my understanding is there was a time before I was interested in the property when service pipes were put in by plumbers here, but of the facts I am unable to state.

Q. How has it been since 1891 since you have been interested in the property?

A. My best recollection is that since then, barring clandestine connections, the service pipes have been laid by the Company.

Q. How many services did the Knoxville Water Company have April the 1st, 1895?

A. As near as I can now determine from data at hand, about 2,220, not including blind services, as we have called them, laid in advance of paving, but not supplying water to consumers.

Q. Were the blind services included in your former estimate?

A. No sir they were not.

810 Q. How many of those services were in the old city?

A. I am unable to divide those.

Q. Could you tell how many were outside the city?

A. No sir I am unable to tell you.

Q. Can you tell how many were in North Knoxville?

A. None of these were in North Knoxville as I understand it.

Q. How many were there in North Knoxville at that time?

A. I am unable to state.

Q. Your Company had at that time acquired the North Knoxville plant but not the Lonsdale-Beaumont?

A. That is true.

Q. In your estimate for 1891 you included the North Knoxville services didn't you?

A. I am unable to state as to that. If that division is desired I think that would have to be obtained from the Superintendent.

Q. What I inquired about is were they in fact included in this estimate without asking you to divide them about 1800 for 1891?

A. My present impression is that — were not. I would have to go back to the application or files of the Company I think to determine positively.

Q. The fact can be determined definitely from the records of the office can they?

A. I am not quite sure about that as of that early date.

Q. Now how many services had you March 31st, 1901?

A. The total number of service pipes and connections laid to March 31st, 1901, not including blind services laid in advance of paving was about 4313. By this I do not mean to imply that there were that number in use.

Q. Were the numbers of about 1800 in 1891 and of over 2000 in 1895 the numbers in use at that date?

A. No sir, they were the numbers that had been laid and entered into considerations of invested values.

Q. Will you give the numbers included in the number of services that you have stated for 1891-1895 respectively that were not in use?

A. I am unable to, give you the number that were not in use. That would appear in the records of the Company at the office as to the number of shut-offs which I have not at hand.

Q. How many blinds at those respective dates that are not

811 included in those above estimates, had been laid by your Co.?

A. On the 1st of M-rch 1901 it was 206; in 1891 there were no blind services, and I hav-n't it for the other dates, that is to say 1895.

Q. How many of the services in 1891 were meter rate service?

A. I am unable to give you that information. I will say this that in 1890 there were very few meters; indeed I am not sure there were any.

Q. How many meter rate services on April 1st 1895?

A. The number of meters that had been installed up to Dec. 31st

1891 was about 64; the number that had been installed and remain-in use up to March 31st 1895 was about 90.

Q. How many had been installed, whether in use or not, in 1895?

A. About 93, one having been taken out in the year ending March 31st 1894, and 2 taken out in the year ending March 31st 1895.

Q. How many meter rate services did you have March 31st 1901?

A. About 275.

Q. Does that include the number in use?

A. That is the whole number installed less these that had been taken out in the whole works, including Knoxville, West Knoxville, North Knoxville and out-lying territory.

Q. How many of these were in the City of Knoxville?

A. I am unable to divide those.

Q. I repeat, were that number in use at that time?

A. That was the number in use as closely as I am able to determine it.

Q. How many had been installed at that time as well as in use?

A. In addition to the 3, the one which I have testified to as being taken out in 1894, and 2 in 1895, 2 had been removed in the year ending March 31st, 1896, one the year ending March 31st, 1897, one the year ending March 31st, 1899, and one the year ending March 31st, 1900.

812 Q. How many services did your Company have on the 31st, of March, 1902?

A. I am unable to tell you.

Q. Will you tell me how I can get that information?

Mr. CALDWELL: The plaintiff is of the opinion that this line of inquiry is not proper in this cause and excepts to this and all other questions that may be asked hereafter inquiring into the business affairs or condition of the plaintiff Company after the 31st of March, 1901, such evidence being irrelevant and incompetent and inapplicable to any proper issue in this cause.

COMMISSIONER: If this be treated as an exception it is over-ruled by the Commissioner because strictly within the 9th paragraph of the special requests of the defendant. The Commissioner holds that under the original decree giving parties the right to make special requests by filing specifications, he is divested of all power to rule that the special requests are irrelevant, but must permit proof thereon, until the Court is instructed otherwise.

(The WITNESS:) I am unable to tell you.

Q. Are you not now testifying within a stone's throw of the Knoxville office of your company?

A. Pretty nearly within that distance.

Q. Are not the books of the company in that office?

A. Certainly books of the company are there; I suppose the information you ask is there.

813 Q. Now you have given the information on this point that I have asked for up to March the 31st, 1901. Will you not obtain and give me the information since March 31st, 1901, to-wit:

up for the year ending March 1902, and then up to the present date in separate items?

A. As I understand, this is not related to any direct testimony which I have given. The limits of my direct testimony having been prior to March 31st, 1901. The information asked for is in the records and data made by and in the custody of other officers, and I have never seen them. I therefore think that in-asmuch as it opens up a new line of inquiry I am not a competent witness on that subject.

Q. Then you deny the right of the defendant to inquire about any other matters on cross examination except those you have testified to in chief?

A. So far my answer is complete as far as I have stated it; I am not passing upon the rights of the defendant in regard to that.

814 Q. You are President of the Company are you not?

A. Yes, sir.

Q. And you have control of the books of the Company?

A. No, sir that does not come under the functions of the President; it is entirely under the administration of other officers.

Q. You did examine the books relating to the information you gave up to March 31st, 1901?

A. I examined the data furnished me by the officers having them in their custody, I did not examine the original books.

Q. Can you not demand the same data from the same officers for the same class of facts since March 31st, 1901, as before that date?

A. I have no doubt the information would be furnished me if I asked it.

Q. Will you ask it and furnish it?

A. Not at present unless advised by the Court or Counsel to do so.

Mr. PICKLE: I ask the Master to require the witness upon these statements to obtain and furnish the information asked.

COMMISSIONER: The Commissioner will not require it at this time.

Mr. PICKLE: The defendant excepts to the Master's holding.

WITNESS: That information asked for can and undoubtedly will be given by another officer of the Company.

Q. Could it be more probably furnished since 1891 than before that date by another officer?

815 Mr. CALDWELL: I don't think that is a relevant question now.

COMMISSIONER: The question may stand and the witness may answer it or not as he pleases.

Q. Do you decline to answer?

A. I can think of no more appropriate answer than I have made.

Q. Now, Mr. Wheeler, your Company assumes to have under its rules and regulations of date April 1st, 1895, the right to put in meter services wherever they pleased, do they not?

A. Subject to limitations set out in the rules and regulations I think they have. The administration of that part of the business has not come under my direction however.

Q. Isn't that your construction of the rules and regulations of April 1st, 1895, that your Company has the right to put in meters for any services it chooses and have you not acted upon that construction?

A. That is true subject to the limitations I have stated. I haven't the rules and regulations before me, but generally I think that is true.

Q. Do you recognize any limitation upon that power?

A. Yes, sir, a previous contract would be a limitation to the taker.

Q. What limitation is there in the contract?

A. What contract do you refer to?

Q. The one you refer to in your answer above?

A. I refer to any special contract with the taker that might have been entered into fixing terms for supplying water different from those stated in the rules and regulations. As to the existence of such contracts, I have no knowledge; there might be some such however.

816 Q. But you do not recognize the existence of any such limitation in your contract with the city, or in your rules and regulations of April 1st, 1895, do you?

A. I don't recall any at present.

Q. Now under these rules and regulations, dated April 1st, 1895, and under which you are furnishing the people of Knoxville water at present, I will ask you if under the head of Meter Rates on page #6 of the pamphlet filed Dec. 7th, 1901, as Exhibit "6" to your bill, there is not this clause: "Provided that the minimum meter charge shall not be less than $10.00 per annum, and meter rent, and further $1.00 per annum for each one quarter inch nominal size of meter."

A. All that you said was not intended to be in quotations?

Q. Yes, sir, just quote it if I have not quoted it correctly.

A. As you stated, it employed a doubling of the meter rent—a repetition of the meter rent—the provisions of the rules and regulations within the scope of your inquiry are "provided that the mimimum meter charge shall not be less than $10.00 per annum and meter rent." Then under the head of Meter Rent it is established in the following terms :"$1.00 per annum for each one quarter inch nominal size of meter."

Q. Then under these rules and regulations the smallest meter rent that your Company charges any person or customer to whom it furnishes water by meter charge, is $10.00 per annum, and the $1.00 for meter rent additional, is it not?

A. That is the limit which it may charge; what it does, I am unable to advise you.

817 Q. Then it is optionary with your company at any time it chooses, to transfer private dwellings consisting of four rooms for which you fix a lump rate of $6.00, five rooms for which you fix a lump rate of $7.00, and six rooms for which you fix a rate of $8.00, being $.50 for each additional room at any time you choose to meter services is it not, and thereby compel the customer to pay

at least $11.00 for water supplied, whether he consumes that amount of water or not, isn't that true?

A. Technically that is true as I understand it. As a matter of policy and practice, it is not done, however.

Q. What I am inquiring about is the Water Company has, or assumes to have the power to do it, doesn't it?

A. I think I have just answered that, that, technically it appears to be permissible under that schedule.

Q. And this is true, is it not, with reference to all the lumping charges that you make or fix in this schedule, that they may be changed to meter rates, and the customer required to pay $10.00 per annum, and meter rent $1.00 per annum?

A. It is true that according to these rates, rules and regulations "the Company reserves the right to attach a meter to any service at its option, and in lieu of the above rates charging the following." Then follow the meter rates. As a matter of practice our interpretation of that is, that a meter is not to be installed, and a minimum price charged in excess of the lump price fixed in that schedule, except in so far as that excess consists in the meter rent, which is intended to reimburse the maintenance and repair of the meter.

Q. Well now you collect your charges for water monthly, don't you?

A. I will have to refer you to the superintendent for
818 those facts.

Q. Formerly you collected them quarterly?

A. Do you refer to all charges?

Q. The general run of charges?

A. I would say no. We collect fixture charges quarterly still I think.

Q. What do you mean by fuxture charges?

A. Other than meter charges.

Q. You do collect meter charges monthly now, don't you?

A. I think we do, many of them, perhaps all of them. I am not sure about that.

Q. Well now isn't this a fact, that you require the customer to pay 1/12 of this amount of $11.00 whether he uses that much water in a month or not?

A. Well he is compelled to pay the minimum charge whatever it may be.

Q. And wouldn't that be 1/12 of $11.00?

A. I would have to refer you to the superintendent for that rule.

Q. Then is it not a fact that under your former prices, do you not require them if they use more than the amount of water that the meter rates amount to, 1/12 of this aggregate, that you require them to pay for all they use?

A. Not so far as my knowledge goes.

Q. And allow them no credit for deficiencies on other months?

A. I do not know about that; it is not within my knowledge.

Q. Now you have criticised the proposed rates fixed by the city ordinance of March 31st, 1901, as being unbalanced or unequal. Do you think a rate that permits the Water Company at its sole dis-

cretion to transfer a customer from a $6.00 rate to an $11.00 rate, is a fair and reasonable schedule of rates?

A. It may be under certain circumstances. That is in common practice with water works whether owned by Water Works Companies or municipalities.

819 Q. Do you think that permissible?

A. I think that permissible.

Q. Now as a matter of fact has not your company largely increased its meter services within the last two years, and applied them largely to resident properties that heretofore fell under the lumping rates, page #1 of the schedule.

Mr. CALDWELL: We object to the question as it is the same question that the Court has heretofore held the witness excused from answering.

A. So far as that inquiry refers to matters prior to March 31st, 1901, the facts were shown in my answer as to the addition to meter service, and up to that time no meters were introduced where the minimum rate was in excess of the fixture rate theretofore charged for that service.

Q. That does not answer the question.

A. No, sir. In general I think I will confine my answers to such portions of your questions that relate to additions prior to the 31st of March, 1901.

Q. Then you refuse to give that?

A. Yes, sir.

Q. How many meters did you put in during the year beginning March 31st, 1900, and ending March 31st, 1901?

—. We put in 25 and took out 1.

Q. How many did you put in during the succeeding year?

A. That comes down since the date of this inquiry, and is covered by my previous answer.

Q. Do you not know that it has become the settled policy of your company to meter the water services in Knoxville?

Mr. CATES: Plaintiff objects to this question because it is not covered by any item of the original order of reference or by any of the requests filed by the defendant, and because it is irrelevant and immaterial to the issues filed in this cause.

COMMISSIONER: The witness will answer this question disregarding all transactions after March 31st, 1901, if counsel for defendant so desires.

820 The further taking of this deposition was resumed at 2:00 P. M., November 17th, 1902.

Q. Mr. Wheeler what is the average life of the meter in service?

A. Well that varies very much, according to the character of the water and care of the meter, and the kind of meter; I have known them to fail and become useless in ten or twelve years, and I have known them to be continued in use in some cases for twenty years; there is no fixed rule about that.

Q. What was the actual cost to the Company of the meters that you placed in Knoxville?

A. I could not now tell you; I can give you the items of my assumption and estimate which I think are close approximation; I can furnish you that data if you wish it later. In my analysis I have put with the cost of the meter, the cost of its connections—its setting and boxing—in each case.

Q. How are the meters put in, by your force here at Knoxville?

A. Yes, sir.

Q. Up to what date are your estimate of the cost of pipes confined to, those laid in the old city of Knoxville, in your examination in chief?

A. As I understand the question all the pipe that had been laid at any time up to December 31st, 1891, or upwards of a year after I had become interested in the property, were included in the first classification under the various heads of cost, as testified to in my direct examination. That first classification comprises however only the pipes that were laid in the old city, or at least did not
821 include any that might have been in North Knoxville at that time.

Q. I find on pages 39 and 40 of your examination in chief under sub-head "8" "Distribution Pipes and Appurtenances in North Knoxville," aggregating $394.32, as covering 15 months ending March 31st, 1893. This seems to be the first item in regard to the laying of pipes in North Knoxville, isn't that true?

A. No, not if I understand the question correctly. You will find on page 35 under paragraph "8" "Distribution Pipes and Appurtenances in North Knoxville laid in 1891." The total amount under head "8" being $32,271.25; that comprises pipe laid by Wheeler and Parks in that year—1891, but does not include filter plant connections, and it includes certain pipe that had previously been laid in that territory by the Knoxville Water Company.

Q. What part of this item of $32,271.25 found on pages 35 and 36 of your examination in chief embraces pipes laid in the North Knoxville territory by the Knoxville Water Company in 1891?

A. I have no data upon that point. When this work was completed in North Knoxville by Wheeler and Parks, it was measured up and summed up as the total in North Knoxville. I think the basis of the classification or the ownership in fact of the pipes in North Knoxville and Knoxville respectively was a matter of negotiations between the parties; those negotiations are embodied in one of those contracts referred to in my cross-examination yesterday or the day before, and which contracts I then supposed not to be available here as I stated, but after adjournment yesterday however, I found that those contracts had been entered in the records of the Directors of the Company, which I have here.

Q. From whom did you purchase—that is Wheeler and
822 Parks—the pipes laid in North Knoxville in 1891 that make up this item of $32,271.25?

A. I am unable to tell you at the present time.

Q. At what prices did you purchase those pipes?

A. That I am also unable to tell you specifically at present.

Q. From whom did Wheeler and Parks purchase the pipes that make up the item of $394.32 found on pages 39 and 40 of your examination in chief, and at what price?

A. I should have to make the same answer to that question as I did to the last two questions.

Q. From whom did Wheeler and Parks purchase the pipes making up the item of $1263.42 found on page 43 of your examination in chief for pipes laid in North Knoxville for the year ending March 31st, 1894, and at what price?

A. I should have to make the same answer to that question. I have no memoranda at hand showing where these individual pipes came from or the price of same.

Q. From whom did you ordinarily make your purchases of pipe during this period?

A. My impression is that we bought pipe at Chattanooga chiefly for these works.

Q. From whom?

A. I think the name of the Company was the Chattanooga Pipe and Foundry Company, but I think some parts of the pipes came from other sources, I am not quite clear about that however.

Q. Is it not a fact that from and after the 31st of March, 1894, you have not kept up any separation between the pipes laid in old Knoxville and North Knoxville in the estimate that you have made?

A. I think that's true, in my testimony.

823 Q. Now turn to pages 47 and 48 of your examination in chief in this case and state what part of the item under sub-head "4" designated as "distribution pipes and appurtenances—including North Knoxville," aggregating with some smaller items $37,692.34 on page 48 and state what part of this belongs properly to old Knoxville and what part to North Knoxville?

A. I have no means of separating that.

Q. Turn to pages *to* 65 and 66 of your examination in chief under sub-head "4" designated as "distribution pipes and appurtenances" aggregating the net amount, after allowing some credits, of $4,854.30 and state what part is applicable to old Knoxville and what part of that item is applicable to North Knoxville?

A. I am also unable to separate that at present.

Q. Turn to pages 68 and 69 of your examination in chief under sub-head "4" designated as "distribution pipes and appurtenances" aggregating $4,026.55 net and state what part of that is applicable to old Knoxville and what part to North Knoxville?

A. I am unable also to divide that.

Q. Turn to pages 72 and 73 of your examination in chief under sub-head "4" designated in the same manner as above, and state what part of the item of $2,227.84 net, is applicable to old Knoxville and what part to North Knoxville?

A. I shall have to make the same answer to that also.

Q. Turn to pages 75 and 76 of your examination in chief and state what part of the item under sub-head "4," designated as above

aggregating the net amount of $4,467.99 is applicable to the old city and what part to North Knoxville?

A. I am unable to divide that also.

Q. Turn to pages 80 and 81 of your examination in chief,
824 under sub-head "4" designated as above, and state what part of the aggregate of $18,628.06 on page 81 is applicable to the old city and what part to North Knoxville?

A. I am unable to divide that.

Q. These amounts that I have been inquiring about cover the period of 1894 to 1900 do they not, or to 1899?

A. Yes sir to March 31st, 1900 so far as relates to works in North Knoxville and the old city.

Q. Can you make separations between the old city and North Knoxville for those years under the sub-heads of the respective years—"5" designated as service pipes and appurtenances, and "6" designated as meters, boxes and connections and "7" tools, teams, vehicles, office furniture, etc.?

A. No sir, I am also unable to give you subdivisions under the heads which you have mentioned.

Q. Then it is a fact is it not that North Knoxville and old Knoxville were operated as a single plant without separation of expenses or revenues during the years 1894, 1895, 1896, 1897, 1898 and 1899?

A. Yes sir that's a fact.

Q. And you can make no separation of the improvements, additions, or revenues of the two plants for those years?

A. I can not with any data in my possession now. I am speaking of my individual possession, of course.

Q. Mr. Wheeler, I see that you have charged in your estimate of the cost of the original plant the pipes at $35.00 per ton of 2000 lbs.?

A. Yes sir.

Q. Now I will ask you if during that period the ruling price of such pipes was not from $24.60 to $32.00 per ton of 2000 lbs. and if this pipe was not actually purchased at this price?

825 A. No sir not so far as my knowledge of the facts go. $35.00 per ton represents my judgment of a fair average price of pipe.

Q. Have you in your possession any books or papers showing what was actually paid for this piping?

A. In this case and within those dates you mean?

Q. Yes sir.

A. No sir I do not think I have. With reference to construction up to the first year in which I was interested in the property as I understand it.

Q. No the initial years?

A. No sir I have no papers that furnishes that information so far as my knowledge goes. My judgment of the average price in this case was affected also by the relative amounts of this pipe which were laid incident to the original construction of the works in

1882 as a large amount of that expenditure was incurred at that time when pipe was higher than it was at some subsequent dates.

Q. When do you understand that the original plant of the Knoxville Water Company was erected and when completed?

A. In 1882 and 1883 or thereabouts.

Q. What was the cost according to your estimates in your examination in chief in this case of the erection and completion of the plant of the Knoxville Water Company in 1882 and 1883 exclusive of the real estate?

A. I am unable to say that.

Q. Well please examine your estimates and make up from them the cost of the plant at that date—say the first of January 1884 according to your estimates?

A. According to my estimates the cost of the plant as created up to January the first 1884, was $128,063.58, subject to the
826 deduction of any parts of the engine house as I found it there in 1890, of the boiler house as I found it there at that time, the tool house, coal chute, store house and fence and indeed any part of the machinery and appliances that may have been added subsequent to 1884. To explain what I mean by that I have assumed for the purpose of my analysis that the parts to which I have referred were constructed prior to 1884, but whether certain parts of them may not have been added after that date I have no means of knowing. The chimney I have not included in my total of $128,063.58 because I have been told since I made this analysis that that was not the original chimney, and records found in the Court House show there was a smaller chimney built in connection with the original works which was replaced by the chimney which I have estimated in my analysis. The sum to which I have testified as the limit of expenditure up to 1884 includes also the 20% which I have used in my items to provide for engineering, contractor's services, expenses and profits and interest on the capital during the year of construction.

Q. Now will you please give the several items under the heads according to which you have made out your original estimates in your examination in chief that make up the above sum of $128,063.58?

A. Those items are:

Engine House and pit	$9,730.70
Boiler house	1,060.40
Tool house	161.40
Coal chute	543.31
Store house and fence	289.80
827 Davidson Pumping Machinery, and its foundations	14,700.00
Suction and Discharge Pipes and connections appertenant to the pumping machinery	2,443.51
Boilers and appurtenances	3,042.00
Reservoir	33,000.00
Street mains and appurtenances	63,093.12
Making up the total of	$128,063.58

Of those I have no means of knowing whether in 1884 they were in the condition as I found them in 1890 or not; I have so assumed in my analysis.

Q. What was the capacity of this plant as originally constructed. I mean by that what sized city as to inhabitants was it capable of supplying with water?

A. From 10,000 to 15,000 or 20,000 people so far as their supplying capacity was concerned. Of course the pipes as originally laid would have to be extended from time to time to reach the additional population for which the supply was intended.

Q. What was the capacity as regards the reservoir, pumping machinery, etc.?

A. The reservoir had a capacity of about 3,600,000 gallons as appears from examinations I have made since the date of this inquiry. The pumping machinery had a capacity of from 2,000,000 to 3,000,000 gallons per day working continuously throughout the 24 hours.

Q. How many people would a reservoir and pumping engine of this capacity supply with water under ordinary conditions?

A. Oh as I stated before that plant was fairly well adapted to supplying from 10,000 to 20,000 people.

Q. How about the reservoir?

828 A. As to capacity the supply of water depends chiefly upon the machinery behind it to put the water through it. The reservoir itself does not limit very materially the capacity of the works but it is the supplying machinery behind it and the distribution plant or pipes that are fed by the reservoir that determines the supplying capacity of the works. For instance a population of 50,000 people could be supplied with no reservoir whatever with a system of direct pumping, which is often used. That reservoir was apparently designed to be used for sedimentation; one compartment of it was designed apparently to receive the raw from the river which should undergo sedimentation and thence into the other compartment to be distributed. Used in that way the effective capacity of the reservoir is very much more limited than when used in connection with a filter plant by which no sedimentation in the reservoir is required.

Q. What is the ordinary life of a water plant in its more substantial structures such as the reservoir, pipes, engines, etc.?

A. Well the life of the different parts of a plant vary very materially. The fair average life for an entire plant has been taken to be about 30 years, taking all parts of the plant together, but different parts of the plant have different periods of usefulness, ranging from perhaps 10 years to 50 years or more, so far as affected by natural deterioration, or wear and tear. There are other elements which determine however the life of a plant; the most conspicuous among the other elements is its continued sufficiency or rather its ultimate lack of sufficiency to meet the growing demands of the service.

Q. What, according to your estimates was added to the plant

during the year 1884. I mean the aggregate amount of the
829 estimated cost of additions, repairs, etc.?

A. I have assumed that of the additional distribution, pipes and appurtenances from January 1st, 1884 to December 31st, 1891, amounting to $77,009.56 laid during that period of 8 years, was laid as of an average date of July 31st, 1887; I have no means of apportioning that amount of construction over the several years of that period, and I make use of that consideration only for the purpose of approximating the accrued depreciation. I am not able to divide the amount from any facts known to me between the several years in which that total construction was incurred.

Q. I will ask you then what amount according to your estimates was put into additions, repairs, etc. of the plant between the first of January, 1884 and the last of December 1890, or at the time you acquired control of the plant in the latter part of 1890 or the early part of 1891?

A. The only division I can make next after 1884, would be the additional construction down to December 31st, 1891.

Q. Well give the additions on account of repairs, additions etc. to the plant, between the first of January 1884 and December 1891, the date you refer to, excluding real estate?

A. The total amount of such additions according to my analysis, including 20% for engineering, contractor's services and expenses, $118,197.75 is made up as follows:—

Chimney stack	$2,238.74
The second pair of boilers installed I have assumed in 1889	2,982.00
Pipes and appurtenances	77,009.56
Meters, meter boxes and connections	1,696.20
Tools, teams, furniture, etc	2,000.00
830 Distribution pipes and appurtenances in North Knoxville	32,271.25
Making the said total of	$118,197.75

Q. In distributing this equally over the years how much would this be per annum?

A. I have not assumed such a distribution, but it will make one-eighth of that amount.

Q. How much of this amount accrued for the year 1891, and under what account after you came in possession of the plant?

A. According to my estimate $32,271.25 accrued in the year 1891 on account of the North Knoxville distribution pipes and appurtenances. There is also in that amount, if you care to have it separated an item of $2,982.00 which is for additional repair of boilers installed in 1889. Deducting those two items it leaves $82,944.50. That includes the item of the chimney which in my analysis I have assumed to have been built in the original construction, but which actually replaced one which was built in the original construction. If I deduct that it leaves $80,705.76 as the addi-

tional amount of construction during the eight years from January 1st, 1884 to December 31st, 1891, which apportioned over those eight years would be equivalent to an additional construction of $10,088.22 in each of those years.

Q. Now does this $80,705.76 include any construction outside the corporate limits of Knoxville, either in North Knoxville or elsewhere; if so what amount?

A. I think it does not; unless it is—there may have been some small pipes in territory incorporated into the town of West Knoxville, but if so I have not them separated and could not testify to that fact.

831 Q. Does it include the pipes laid in the territory known as the old Tenth Ward or any part of it?

A. No sir I think not; so far as I know; it does not. If there were any pipes laid in the old Tenth Ward prior to 1890, I think probably it does include them but I have not separated them and I have no means of answering conclusively as to that fact.

Q. Does this expenditure between the first of January 1884 and the 31st of December 1891, embrace any items of replacement of the old plant?

A. I have already stated that it included the chimney stack replacing the old chimney stack, but that the original chimney stack was not included in my. estimate of the construction cost; that refer-ing to the pipe system includes only the net additional cost of pipes after deducting the value of the old pipe taken up. I recollect no other items of replacement entering into those values.

Q. Why was the old pipes taken up and what amount and where?

A. I have no record of any having been taken up during that period.

The further taking of this deposition adjourned until Tuesday morning November 18th 1902 at 9:00 A. M.

832 TUESDAY MORNING, *November 18th*, 1902—9.30 a. m.

Cross-examination of WM. WHEELER resumed:

Q. Mr. Wheeler on page 25 of your examination in chief under head "B" designated as "Boiler House, frame, sides and roof" the item aggregating $1060.00 this being a part of the original construction of the plant of the Knoxville Water Company, you state that this boiler house was enlarged about 1889 and since replaced with brick boiler house of enlarged dimensions which now stands there. I will ask you when this replacement of the boiler house erected at the time of the original construction and enlarged in 1889 took place?

A. The first replacement took place in 1894 and 1895. A still further enlargement has been since made during the year ending March 31st, 1901, to accommodate an additional pair of boilers and induced draft plant.

Q. On page 26 of your examination in chief under head "C" designated as Tool and Storage House, the item amounting to $161.40 of the original construction estimate, you state that the

house was first removed to the east side of the lot, and was at a later date replaced with brick building. When was this replacement made?

A. It was removed from the west to the east side of the lot during the year ending March 31st, 1896 at an estimated cost of $25.00 as appears in my direct testimony, Page 62 and was replaced by a brick Tool and Storage House of somewhat enlarged dimensions during the year ending March 31st, 1901, at a cost estimated at $314.16 as also appears in my direct testimony. (Page 91.)

Q. Under head "D" on page 26 of your examination in chief, designated as "Chimney Iron Stack" the item amounting to $2,238.74 in the original construction, in which you state that this stack was replaced, and then again replaced by short
833 stack and induced draft. When was each of the replacements of this stack made?

A. This stack referred to on page 26 of my direct testimony to which you call my attention is the first stack for which any construction cost has been included in my statement. As I stated yesterday in my cross-examination, I have since been informed and believe, as I also understood when this analysis was made, that it replaced a stack which was erected at the time when the works were originally constructed. That first stack I have made no account of whatever. The one for which the estimate is made on page "26" was discontinued during the year ending March 31st, 1901, when there was installed a blower and engine appurtenances to afford mechanical draft for the entire boiler plant in lieu of the stack. All is set out in my direct testimony.

Q. When was this particular stack that makes up this item erected?

A. I have not the information at hand now when it was erected, but between 1883 and 1890.

Q. Under the heading "E" on page 27 of your examination in chief, designated as "Coal Chute" constituting the item $543.31 of the original construction of the plant, you state that this coal chute has been twice replaced. Please state when those replacements occurred?

A. The first replacement occurred at the time when the city extended Front Street, I think it is, across the premises of the Water Company through its pumping station property, whereby the coal chute had to be cut off across and above that new street. At some subsequent date the balance of that coal chute was discontinued by reason of the necessity of enlarging the coal pocket, which
834 enlargement was made by extending it up the hill to the new street, so that the coal was dumped directly into the coal pocket instead of being carried part of the way down the hill through the coal chute to the pocket. The first change in the coal chute referred to in my direct testimony appears to have been made during the year ending March 31st, 1896, and was actually made in the calendar year of 1895. That change was incident to the first enlargement of the coal pocket and reconstruction of the coal pocket to adapt it to the rebuilding of the Boiler House to which I have

just testified, in doing which the coal pocket was extended part of the way up the hill in the rear of the boiler house, and the coal chute was covered and partially rebuilt so as to prevent coal from wasting over the sides as it slid down the hill. I think this change was also made in connection with the extension of Front Street by the city through the pumping station property. The next change or addition to which I have testified was made during the year ending March 31st, 1900, and consisted in the construction of weighing scales at the side of the new street and at the upper end of the coal chute installed for the purpose of weighing coal, and the cost thereof, to-wit: $512.40 was wholly incident to the installation of said scales as appears in my direct testimony. (Pages 78-79 of this Deposition.)

Q. Under what arrangement with the city was Front Street extended through the property of the Water Works Company as you have above stated?

A. The Water Company gave to the city, or at least released to the city, without compensation, right-of-way for this street—the city constructed the street and the Water Company assumed all the expense of changing its pipes and adapting its Works to the new street.

835 Q. Wasn't the street extended upon application of the Water Company?

A. It was not.

Q. Under heading "F" on pages 27-28 of your examination in chief designated as "Store House" constituting the item of $182.20 of the original construction of the plant, you state that this building has been since removed. About what time was it removed?

A. The item of Store House referred to, together with the fence immediately following it, aggregating a total of $289.80 was discontinued during or about the month of February 1899, at which time as appears in my direct testimony (P. 134) the depreciation on these items became complete by disuse and removal, with no salvage, being in effect worn out so far as the fence is concerned, and the building was in bad repair and not considered worth rebuilding.

Q. Where did you get the data for making up the estimate of an item like the last one you have testified about?

A. What data do you refer to?

Q. The data that you made up this estimate from?

A. If you will specify the particular data—as there are several kinds of data referred to in the answer—I will endeavor to answer you.

Q. I notice that you in making up the item of Store House and fence charge for lumber, boa-ding, shingles, window-frames, hardware, carpenter work, posts, &c. Where did you get the data for these things?

A. The quantities of material entering into the building I derived from either measurements or estimates made upon the basis of its dimensions by me, in connection with my assistant who furnished the dimensions of these buildings. By my assistant I mean in this case, Mr. Kimball who was Superintendent of the Company.

836 Q. When were these estimates made?

A. These estimates were made during the Summer of this

year—this particular analysis I am now speaking of—were made during the Summer of this year. The dimensions of this building were determined by the original surveys of the city and the works and all its buildings as referred to a few days ago in my direct testimony, in which you will recall I stated that we made accurate and actual surveys of every building within the limits of this City and within the limits supplied by these works and including of course all the buildings then owned by the Water Company.

Q. Under the heading "G" on page 28 of your examination in chief, designated as "Pumping Machinery and Appurtenances" constituting the item of $13,200 in the original construction. You state that these were replaced by machinery of greater capacity. At what date was this replacement made?

A. This replacement was made during the year ending March 31st 1901—at least it was completed during the year ending March 31st, 1901, and was the work incident to replacing the original pumping engines and appurtenances with the new Worthington pumping engine, installed during the year ending March 31st, 1901, for increasing the supplying capacity of the works and of increasing also the efficiency and economy of operation.

Q. What was the cost of this Davidson Engine to the parties who placed it in position—I mean the actual cost?

A. I do not know.

Q. From whom was it purchased?

A. I do not know, but I presume that it was purchased of Mr. Davidson, the manufacturer and designer of the machinery.

Q. Where are his works?

A. I think he is in New York; I am not quite sure whether
837 it is New York or Philadelphia—New York I think.

Q. I see you have charged or estimated the cost of this engine and outfit at $10,000. How much salvage was there on it?

A. The salvage under this item appears on page 135 of my direct testimony and is there stated to be $1,095.00. As an actual fact I have since learned that the salvage was less than that, by reason of the fact as testified to, we allowed as "the fair value of the rest of the machinery and fittings as old junk, say $500.00" that old junk has since been sold at a price somewhat less than $500.00.

Q. To whom did you sell the engine?

A. I do not know; Mr. Kimball would be able to tell you that; he sold it to some party here in Knoxville.

Q. What was the capacity of that engine?

A. That is the engine about which I testified on yesterday as having a capacity of between two and three million gallons in 24 hours continuous operation.

Q. What was actually paid—I mean the actual cost of the Worthington engine that replaced this engine?

A. The cost to whom, the Water Company?

Q. Yes sir.

A. I should have to refer you to the Treasurer for that.

Q. On page 29 under the same sub-head designated as "Foundations for Davidson Machinery" is an item for $1500.00 entering into the original construction cost. What became of that work?

A. When the Davidson machinery was replaced by the Worthington machinery, the foundations of the old machinery also were replaced as they could not be used as foundations for the new. Four cast iron "I" beams referred to were used as stated in my direct testimony, to support the blower and engine which furnished
838 mechanical draft for the boilers, and there was consequently salvage on that part of the foundations of which $85.00 has been allowed.

Q. Under the same heading on page 29, designated as "suction and discharge pipes and connections" constituting an item of $2443.51 as footed up on page 30, which it is stated was replaced by the plant of greater capacity. When was this replacement of suction and discharge pipes made?

A. At the same time that the pumping machinery was replaced. It was all a part of the same replacement.

Q. What was the salvage from this item?

A. Beside the salvage to which I have already alluded, or including the salvage to which I have already alluded, there was a salvage of $1095.00 to which I have already testified, being found on page 135 of my direct testimony.

Q. What became of these suction and discharge pipes?

A. You will find that set out in part on page 135 to which I have already called your atention as follows: Salvage "one direct acting air pump used for pump well $100; Four cast iron "I" beams used to support flues (for mechanical draft) $85.00; about 35,000 lbs. cast iron pipe at one cent, $350.00; five-eight inch specials and two-eight inch valves, $60.00, and the fair value of the rest of the machinery and fittings as old junk, say $85.00."

Q. Well all of this piping was retained by the Company was it not?

A. To what do you refer?

Q. To the suction and discharge pipe?

A. No sir I have already stated several times General that the rest of it was sold as old junk.

Q. To whom was it sold?

A. I have already stated I could not tell you. The Superintendent will have to give you that information.

839 Q. Has not a good portion of this piping been used in other construction works?

A. General, I have read to you "35,000 lbs. of cast iron piping at one cent" that we have retained, and whether used or not I am unable to say; but we have given credit for it.

Q. At one cent per lb.

A. Yes sir.

Q. What was your original estimate as to the price of that piping?

A. I am unable to tell you. It was probably machined pipe to some extent, but I am unable to tell you that from any data I can conceive of. By machined pipe, I mean flanged pipe which is used for connecting up the pumping machinery. It is used for that purpose and no other except it be used as old junk.

Q. However it is very expensive in its original purchase?

A. I do not know what you mean by "very expensive."

Q. High priced I mean?
A. Well if it was a fair price I do not consider it a high price.
Q. It is higher than the ordinary price?
A. Well yes, machined pipe is higher than the Bell or Spigot Water pipe.
Q. Under the heading D-1 pages 30 and 31 of your examination in chief designated as "boilers and appurtenances," constituting item of original cost of $3,042.00 as having been replaced in 1895. What salvage was there on this item?
A. The salvage on that item appears on page 135 of my direct testimony and is as follows: "Old boilers sold netting $145.00; brick from old setting estimated at $75.00; steam and feed water connections $225.00. Amounting to a salvage of $445.00."
Q. What became of the rest of the material embraced in this item?
A. There was no "rest" of it that I now see; I think that
840 covers the whole of it.
Q. To whom was this sold?
A. I do not know; I could not tell you about that.
Q. Was it sold at all?
A. The old boilers were sold as stated. The brick were probably not sold as they are estimated. As to the steam and feed water connections I assume the value of those for further possible future use were also estimated.
Q. At what price did you estimate the brick?
A. I have just stated, $75.00.
Q. I mean at what price per thousand?
A. I hav-n't estimated them by the thousand, but in a lump sum—whatever there might be of them capable of being used.
Q. When was this estimate made?
A. This past Summer.
Q. Under the heading "d-2" on page 31 of your examination in chief designated as "two additional boilers and appurtenances set in 1889 and replaced in 1901 constituting item $2,982.00 of the original cost of construction, do you mean by your statement there that these boilers were set in 1889 and replaced by other boilers in 1901?"
A. To the best of my knowledge they were set in 1888, or 1889. I referred to those boilers in my cross-examination yesterday afternoon as having been erected to the best of my recollection in the year 1888 or 1889.
Q. They were replaced in 1901 were they not, as there stated?
A. They were replaced in January 1901, as stated on page 136 of my direct examination.
Q. What was the salvage on this item?
A. The salvage on this item appears on page 136 of my direct examination and amounts to $685.00.
841 Q. To whom were the old boilers sold?
A. I am unable to tell you. The Superintendent can tell you that.

Q. At what price per thousand did you estimate the brick for salvage purposes?

A. I estimated them at no particular price per thousand. I simply estimated them at $75.00 in a lump sum for whatever number there might be of them capable of being used.

Q. At what did you estimate the steam and feed water connections?

A. I estimated that six-tenths could be used and made the salvage six-tenths of the construction cost which originally entered into my analysis.

Q. Will you state what is mean- by steam and feed water connections?

A. The steam and feed water connections are the steam piping which connect the boilers with the feed pumps and with the pumping machinery.

Q. What changes, if any, have been made in the reservoir since the original construction of the plant?

A. I do not recall any at present that enter into construction cost since the original completion of the reservoir, except of course as I have considered the element of depreciation which is referred to on pages 136 and 137 of my direct testimony.

Q. Now the cost of all these replacements has entered into the estimates you have made of construction expenses for the years when they were made have they not?

A. They have entered into my estimates of the invested capital of values less salvage.

Q. Why was the Davidson Engine replaced by the Worthington?

A. To afford sufficient capacity to meet the increased needs of the service, and to afford also greater economy and greater safeguards in maintaining the supply.

842 Q. How long has the Worthington engine been in use?

A. Ever since it was installed in 1901, as I have just testified.

Q. How long has it been manufactured?

A. How long has the Worthington machinery been manufactured?

Q. How long has the engine of the Worthington make been manufactured?

A. A great many years. It was built by a long established company.

Q. How about the Davidson?

A. That has also been built and been on the market for a good many years.

Q. What is the estimated cost of the North Knoxville plant—I mean construction cost of the North Knoxville plant that enters into your estimates in this case, and give the general items and amounts of each?

A. The answer to that question is found in detail on pages 35 and 36 of this deposition—so far as I have embodied any separation of the pipes in North Knoxville from those in the city of Knoxville, where it will be found under heading figure 8 "Distribution pipes

and appurtenances in North Knoxville laid in 1891." Also on pages 39 and 40 under the same heading figure 8 "Distribution pipes and appurtenances in North Knoxville," the last being additions made during 15 months ending March 31st, 1893. Also on page 43 under the same heading figure 8 "Distribution pipes and appurtenances in North Knoxville" referring to additions made during the year ending March 31st, 1894, after which date all additions to the works in North Knoxville are accounted for in connection with additions to the general works of the company and not separately stated.

Q. Turning to pages 35 and 36 under item 8 designated as "Distribution of pipes and appurtenances in North Knoxville
843 1891" and constituting with the 20% added $32,271.25 of the original cost of the North Knoxville plant, I see that you have charged pipe at $25.00 per 2000 lbs. f. o. b. Knoxville etc. Now I will ask you what was the actual cost of that pipe?

A. You asked me that identical question yesterday and I should make the same answer to-day that I did then, adding thereto as I think I suggested yesterday, that the piping stated under that head included certain pipes which were purchased of the Knoxville Water Company by Wheeler and Parks as set out in certain contracts which appear in the records of the Directors, and I have not the means of knowing the cost of that portion of the pipes.

Q. Turning to pages 39 and 40 of your examination in chief above referred to under item 8 designated "Distribution pipes and appurtenances in North Knoxville for 15 months ending March 31st, 1893" and constituting with the 20% added the item of $394.32 the original construction cost of the North Knoxville plant, I will ask you the same question with reference to that piping?

A. I have no data bearing upon that. Those pipes were laid by the company direct.

Q. By what company?

A. The Knoxville Water Company—the only company I think I have referred to here.

Q. Turning to page 43 of your examination in chief above referred to under the heading "Distribution pipes and appurtenances in North Knoxville" footing up the net balance with 20% added $126.42. By whom were these pipes laid?

A. I make the same answer to that as to the preceding question.

Q. Have any of these North Knoxville pipes been replaced since the original construction?

844 A. By that you mean since they were originally laid—have any pipes been taken up in North Knoxville?

Q. Yes sir.

A. I am unable to say that there have been. If there have been any such replacements I have not taken them into account.

Q. You may have stated elsewhere, but I will ask you to state in this connection what is the length of the useful life of piping such as this?

A. Well it depends upon a variety of circumstances and conditions. The useful life of a pipe system may be determined as in this case,

and as I have stated in my deposition, by the necessity for changes due to the increasing demands of the service or of the supply required for the community, and changes in the method of supply resulting from changed conditions as set out on pages 148-149 of this deposition and of pages immediately preceding those. Depreciation that results from natural deterioration or from electrolysis is of a different kind, but just as real and, subject to such depreciation,—piping that is otherwise suitable for service may have a life of from 20 to even perhaps 60 or 70 years under especially favorable conditions, depending upon the character of the soil in which it is laid, and upon the character of the water which flows through the pipe.

Q. Mr. Wheeler is it not a fact that during the two or three years succeeding the acquisition of the North Knoxville plant by the Knoxville Water Company that the substantial parts of the plant of the Knoxville Water Company, excepting its pipe system was replaced?

A. I do not know what you mean by the "substantial parts." It is a very vague term. What was actually replaced I have set out explicity in this deposition.

845 Q. Well was any of the old plant excepting the reservoir retained in its original condition?

A. Oh yes indeed.

Q. What?

A. Well all that wasn't replaced as set out in my deposition.

Q. What did it consist of?

A. Well to answer that I would have to read this record through. It consisted in general of pumping machinery and boilers which continued in use down to later times stated in my deposition. It consisted of much the greater part of the pipe system.

Q. I excepted the pipe system?

A. It is true as I have set out in my deposition that up to and including the year 1901 substantially all of the original supplying works at the pumping station have been rebuilt or replaced as a necessary result of the increasing demands of this city and its vicinity for water, and of the higher standards of water service, and of the purity of the water which modern developments in water works business have brought about.

Q. Now Mr. Wheeler the piping put in at the original construction has already run a life of about 20 years, has it not?

A. Yes sir pretty nearly.

Q. And that is the minimum life that you give to piping I believe?

A. From what causes do you have in mind or do you mean to imply?

Q. Well I do not know enough about the subject to explain fully——

A. Well I have already stated that very material or expensive changes have been necessitated by means of the growing de-

846 mand of the service, but if you refer to natural deterioration, I think it would be fair to say that cast iron pipe would last 20 years or more. However there are cases in which deterioration

alone have impaired a pipe so that it is unsuitable for use in shorter periods than 20 years. For instance, we had occasion in this city to take up from a fourth to a half a mile of piping, being laid in ashes and cinders in a fill that rendered it unfit for use. Then very rapid deterioration attends electrolysis at times. That is particularly true of wrought iron pipe, but we have had cases here where repairs have been necessitated by electrolysis operating on cast iron pipe. Pipes laid in mud or alluvial deposits of soil also undergo much more rapid deterioration than in clay soil or clean gravel.

Q. Mr. Wheeler turn to page "35" of your examination in chief. I find sub-head "7" reading "Tools, Teams, Vehicles, Office furniture, Fixtures," &c., at $2,000. What is the date of that item?

A. That covers the entire period from the original construction down to the end of the year 1891—8 or 9 years.

Q. How did you make up that item?

A. Well that is an estimate. I made up that item after conference with the Superintendent, Mr. Kimball, who was more familiar with the details than I.

Q. When did Mr. Kimball first become connected with these water works?

A. Well I think I have already testified that he was here as my assistant engineer and resident engineer in 1891, and he was also here constructing works and improvements required under my contract with the water company dated November 17th 1893—he was here during two years more or less following that date. He was also appointed Superintendent in January 1899 and has been Superintendent ever since.

847 Q. Did you make up this statement from any statement found on the books of the company?

A. No sir I think not. I think it was made up from such knowledge as Mr. Kimball had of certain tools, teams and vehicles, and from certain knowledge that I had, but my knowledge was rather limited on that subject. I relied almost entirely on his information for that.

Q. Do you mean that you or he had any knowledge of the tools, teams or vehicles actually employed by the company during the period covered by this estimate?

A. Yes, we knew for instance something about the office furniture of the company as of that time, about the teams, or horses and vehicles which the company had at that time, appliances for tapping mains and tools which were found here when we came in 1890—1891.

Q. Well how much did you give to each of the items, tools, teams, vehicles and office furniture?

A. I am unable to tell you about that.

Q. How much salvage was there from this item?

A. Well you are now dealing with items that have solely to do with original cost of construction. Do you wish to go over the question of depreciation on that item?

Q. Well I am just asking you.

A. Well I don't think your question is very specific; I don't know what you desire.

Q. Well I will ask you now what tools, what teams, what vehicles, what office furniture and what fixtures do you have personal knowledge of having entered into this original construction of 1893 for which you charge $2,000?

A. I have personal knowledge of but very little of it. I did have knowledge of a horse and wagon which the company had at
848 that time, of office desk, table and chairs, but beyond those I think my knowledge of specific articles is of very little assistance to you, as it was to me.

Q. When did you first see the articles named as entering into the construction?

A. In 1890 when I was here and in 1891.

Q. How do you know they entered into the original construction of 1882?

A. I have not assumed that they did. This article as you have just stated and as it appears on the record, is for all tools, teams, vehicles and office furniture that the company had acquired from the original construction down to December 31st, 1891.

Q. What were the tools, teams and vehicles used for?

A. They were used for the repair of the works, for making extension, the vehicles and teams for the superintendent in going about the town and attending to his duties, shutting off and turning on water, and looking after the men employed in the operation and maintenance of the works.

Q. And you think that entered into the construction of 1882?

A. It is an investment item.

Q. Now I find a number of items of this character and I believe under this heading in your several statements here. Is your explanation which you make of this item the same as for the others?

A. The later items perhaps can be specified more definitely. I hav-n't undertaken in my testimony to specify the specific items. If that is desired, I will have to ask you to get that from Mr. Kimball on his examination.

Q. Are there any books showing the specific items upon which these estimates are made?

A. I think it probable that the treasurer's books would show most of the items, but how far they are divided into separate ac-
849 counts I am unable to say.

Q. On page 78 and likewise on pages 114 and 115 of your examination in chief I find an item under heading "1" "Real Estate" "Office building on above lot" (meaning the lot situated on Gay street and now used as an office by the water company) who erected that building?

A. I don't know who erected that building.

Q. It is the building that is now located on the lot and used by the company by an office that you refer to?

A. Yes sir.

Q. Do you know whether it was erected by the company directly or by a contractor?

A. The building was there when we bought the lot and hence wasn't built by the company.

Q. I will ask you what is the date of this item of $2500?

A. That enters into the investment as of the year ending March 31st, 1900, that being the year in which the company purchased that property.

Q. I find another item under the same heading designated plumbing new floor, shop supplies, wagon shed, &c., $1650.00. Who did that work and when was it done?

A. I think that was done mostly by the company after it purchased the building—perhaps entirely, I am not quite sure however.

Q. If done by the company it was done through the salaried officers of the company wasn't it; the Superintendent and resident engineer?

A. It was done under their oversight and direction.

Q. Is this item made up from an actual schedule of the costs on the books of the company—this item of $1650.00 for repairs as above stated?

850 A. I think not precisely; in fact I am confident that it is not.

Q. It is an estimated item is it?

A. I think it is an estimated item with some knowledge or close approximate knowledge of what the fair cost was.

Q. I see you have entered a 20% amounting to $330.00 for these improvements. Don't you think that if it was done by the salaried officers of the company it would be doubling the matter up to put on this 20%?

A. I do not think so. I think that where a work of that kind is done under skilled supervision, which without the skilled supervision would have to be done by a contractor who would reap his profit and probably do less satisfactory work, that for overseeing such work and having it done under skilled supervision in such a manner as to secure better results, the company is entitled to be credited with as large an investment value as if it had been sublet by a lump contract with the result of probably getting inferior work at an increased price. The fact being that the salary of the Superintendent who oversaw that work, is a salary which is paid him for administering the operation and maintenance of the plant. That general line of inquiry such as you raise in this instance, and my general answer, is appropriate I think to whatever construction the company has done through the administration of its officers and employés, since such construction in the absence of peculiar skill on the part of its officers or employés, would have to be done by a contract.

Q. But you actually paid and employed such men as were competent?

A. We did.

Q. And they do it without actual cost to the company?

851 A. They do.

Q. And it is understood in the contract that they will do it?

A. I understand that the company is entitled to as a great a reward as a contractor would be entitled to. If the company furnishes the capital, takes the risk, incurs all the expenses of insurance on men engaged in the work, or else assumes the liability in case they are injured and all such work involves administration services of officers whose compensation, as it enters into the books of the company, does not include any allowance for construction account.

Q. Well taking this item as an example; I will ask you what liability has the water company incurred or paid on account of contractor's risks?

A. I cannot tell you specifically. In that case it did take whatever risk was taken unless it paid some indemnity or insurance company for doing so.

Q. Well what indemnity did it pay?

A. I do not know sir.

Q. Well if it paid an indemnity wouldn't that be the proper measure of the charge on that?

A. On that particular point.

Q. And if it did not pay an indemnity——

A. And if did not, whether it incurred a loss or not, it assumed the risk and is entitled to compensation for it.

Q. That is your idea?

A. That is my idea.

Q. Now I will ask you what engineering services were paid on this item outside of the Superintendent's services and other salaried employés of the company?

A. I think none. A great many engineering services were rendered for which no charge appears on the books.

852 Q. Does the company owe anything for it?

A. That is still an open question. Whether it does or not it has been rendered the company, and if it is not to be compensated for, it has been *donated to the company* and *not to this city.*

Q. Well how much money did you have idle on account of these repairs?

A. I would have to refer you to the Treasurer for that; probably a very small amount as the item is small.

Q. Wasn't it in fact paid out of the Bank acount of the company?

A. If so, earnings were put into construction account, but for the facts I shall have to refer you to the Treasurer.

Q. Three per cent. enters into this account of interest?

A. Oh yes I hav-n't undertaken to distinguish between large and small items. I have used a uniform percentage throughout.

Q. In this connection Mr. Wheeler you have already stated that this plant and its properties were erected both by contracts, or under contracts with contractors and also directly by the company. Now I want you to designate the parts that were erected by contractors, by whom and when?

A. I have already testified that I am unable to state as to the original construction. I am advised and believe that the original

construction of 1882, 1883 was under a construction contract, the consideration of which was stock and bonds. Coming down from that time to December 1890, I have no personal knowledge as to how the construction of that period was done. Since 1890 the construction of the North Knoxville Works of which I have already testified and to which reference has been made in my deposition this morning, that is to say that part of it constructed in 1891
853 was constructed by Wheeler and Parks and subsequently sold to the Knoxville Water Company. Those portions of the works, construction of which was called for under Wheeler and Parks' contract of November 17th 1893, were so constructed under that contract. I am unable to separate however the construction cost or the fair invested values of those parts of the plant from other parts of the plant that were laid by the company just before or just after the carrying out of that contract. I presume however, that the Treasurer would be able from his books to show what the actual disbursements were by the company for such portions of the work as it did otherwise than by contract with Wheeler and Parks, or by purchase of pipes and works of Wheeler and Parks.

Q. Then the only part of the plant constructed under contract of which you have personal knowledge, is that part constructed by Wheeler and Parks under their contract of 1893, is it not?

A. I have alluded to contract in the Director's records which refers to small quantities of pipe that were laid by Wheeler and Parks under a contract in addition to that covered by the contract of November 17th 1893.

Q. Whatever has been done by contract to your personal knowledge has been done by Wheeler and Parks, has it not?

A. By Wheeler and Parks or by Wm. Wheeler as successor to Wheeler and Parks, I think that is true.

Q. Will you put into the record and make as a part of your deposition the contract between the Knoxville Water Company and Wheeler and Parks dated November 17th 1893?

A. I will, or a copy of it, marked Exhibit #—.

Q. Turning to page 71 of your examination in chief I find an item "4 Additional gravity filters of the Warren type each 10′ 6″ diameter with connecting piping" &c. $4,800.00 I will ask
854 you to state from whom the Water Company purchased those filters when they were purchased and at what actual cost to the company?

A. Those were purchased to the best of my knowledge during the year ending March 31st, 1897. The rest of the information you ask for will have to be furnished by the treasurer.

Q. I see you have added an item of $970.00 as 20% on the purchase price of these filters. What is that for?

A. That is for engineering, designing and supervision negotiation of contracts and equivalent to such contractors' services as were assumed and undertaken by the water company, and interest on capital during construction, as has been fully set out in my direct examination and as I have just now explained to you.

Q. To whom was the $970.00 paid and in what amounts?

A. Well it was paid in service. It perhaps, as I have already stated in my examination does not always, or in all cases in which it has been included in my estimates represent actual cash disbursements, but it represents services rendered, risks assumed and a suitable remuneration for such skilled supervision as has been afforded by the officers of the company or employés.

Q. All of this which you have enumerated was done by the salaried officers of the company was it not?

A. No sir it was not—that is if you mean to ask by officers whose salaries cover compensation for such service, I say no.

Q. To whom does the company as a debt owe any part of this amount?

A. You mean a legal debt?

Q. Yes sir that is what I mean.

855 A. I am not quite sure that it owes anything to anybody as a legal debt, but it is in the nature as I stated before, of a donation to the company for services which have not been compensated, unless it be an added value as afforded thereby to the capital stock of the company, and to which added value the holders of that stock are therefore entitled. There is a very large amount of services rendered this company which has not been satisfied in cash, and for which no payment appears on the books of the company.

Q. By whom were the sundry filters, and the foundations, estimated to have cost $50.00, put in?

A. They were planned by myself, and were laid out and constructed under the supervision of the superintendent.

Q. The purchase of these filters was a very simple matter that could be done by the writing of a letter couldn't it?

A. It depends on what kind of a letter you write. It involves writing letters, but if you wish me to answer your question by stating that it requires no skill, I should say no for before they were purchased the nature of the filters have to be studied.

Q. Who made the purchase of these filters?

A. I did.

Q. Did you do it by letter?

A. I think I did it by correspondence; whether I had personal interviews I do not now recall.

Q. Can't you remember the exact prices you paid for them?

A. I do not at present.

Q. Can't you look at your letters and say?

A. I could, but I prefer to refer you to the Treasurer for that.

Q. Where did the money come from that paid this $4800.00. Wasn't it paid out of the current funds and bank account

856 of the company here in Knoxville?

A. No sir.

Q. Well from what source?

A. It was paid by the Treasurer. He will have to tell you where he got the funds.

Q. Wasn't it paid for after the filter was instituted and proved satisfactory?

A. I will have to refer you to the Treasurer for that.

Q. As a general rule Mr. Wheeler wasn't all machinery paid for after it had been instituted and tested and proved satisfactory?

A. Why as a rule any construction work is paid for after completion of contract or after installation of the plant for which the payment is made. That is not always the case but that is a general rule.

Q. On pages 92 of your examination in chief I find an account for machinery aggregating $5,880.00 to which 20% amounting to $1,176.00 is added making total $7056.00. On page 93 another item for machinery &c. aggregating $13,365 with 20% added. $2,673. Now I will ask from whom did you purchase this machinery and at what price was it actually paid for?

A. Boilers and boiler fittings were purchased of the Hodge Boiler Works of East Boston; the Hawley Down Draft Furnaces were purchased from the Hawley Down Draft representatives in Georgia—I am not quite sure what city. They were set by the Company—steam piping and water connections were made by the company. The blower and engine was purchased of the Sturtevant blower Company of Boston; the Damper Regulator was purchased of Locke, the manufacturers of the Locke Damper Regulators in Salem, Massachusetts; the Worthington Pumping Engine and the condenser, vacuum pump and jacket pump were purchased of H. R.
857 Worthington of Brooklyn, New York, for the exact prices paid therefor I should have to refer you to the Treasurer.

Q. Who made these purchases?

A. I made the contracts or conducted the negotiations for all of them, designed the plans and laid them out, and not a cent appears on the books of this company as compensation for that service.

Q. Wasn't you at that time receiving the salary you have testified about?

A. I was sir, but that salary is given me solely for maintenance and operation services which are shown in the votes I read to you a day or two ago.

Q. When were these services rendered?

A. During and anterior to the time that this machinery was installed.

Q. Well about what time?

A. During perhaps two years prior to March 31st, 1901 and they continued until after that time to some extent, in passing upon final acceptances of certain parts of the machinery.

Q. This machinery was paid for after installed and found satisfactory wasn't it?

A. I shall have to refer you to the treasurer as to the payments. As a general rule that would be a fair assumption. Certain parts of such machinery is paid for and expense incurred long before its final completion and acceptance.

Q. Have you ever presented any account outside of your salary account for services?

A. I have recently.

Q. When?

A. I think during this past year.

Q. During this past Summer?

A. I think I have during this past year.

Q. Wasn't it at the time you were making up these accounts that you presented it?

A. No sir.

Q. Wasn't it afterwrads?

A. It was submitted to the Directors long before this account was first made up. I am willing to explain that if you desire to draw it out.

Q. I am just asking you the question about it; just an-
858 swer the question I am asking?

A. As I have stated before the compensation for supervising engineer of all these companies was made upon the basis of reimbursing to the supervising engineer such expenses for maintaining the office—the office force that were necessary to the carrying on of the work as would make Wheeler and Parks or Wm. Wheeler whole on that account—Wheeler and Parks as the promoters of various water companies at that time, being willing to donate such services as might be necessary or desirable without further compensation than the payment of their office expenses. That payment was fixed for certain kinds of services, which are defined in the votes to which I have referred, and did not contemplate or cover such further compensation as might be furnished as designing or consulting engineers in connection with construction work. Nevertheless, as the successor of Wheeler & Parks, it has been my practice ever since the contract of November 17th 1893 was carried out, to place my services at the disposal of any of these companies, not only by way of consultation services, but by way of preparation of plans, designs and negotiation of contracts incident to the extensions and improvements of any of these properties, for which not one cent was ever charged to any company, or paid by it, excepting my personal expenses, when I travel from my office to a place where these works are located and a certain per diem for my services while so travelling outside of New England; but for all such services rendered in my office, negotiating contracts, preparing plans and designs for improvements, extensions and additional construction, no compensation in any way, shape or manner has been exacted or paid me. The magnitude of such service rendered to the Knoxville Water Company how-
859 ever, began three or four years ago to be so great, that some two years ago I submitted to the Treasurer the query whether I should not be compensated in some substantial manner, as I felt unable to continue to donate such services gratis without limitation. That matter is now before the Directors of this company but it has not been passed upon.

Q. Will you produce the correspondence fixing the price of these several pieces of machinery that you have estimated in your examination in chief?

A. I beg to state that it would not assist you it seems to me—that that is not the proof of what was actually paid. The Treasurer will testify here and I have no doubt that the final evidence of the amount which was actually paid will be afforded and at at your disposal through the Treasurer. To bring my correspondence here would mean the bringing of a large number of letter books and let-

ter file cases which contain a great deal of other matter, and I should prefer that this proof be furnished in another form.

Q. Well do your letters show the contract amount to be paid—the amount the Treasurer's books show was actually paid here?

A. They do absolutely, except as they may have been modified by any adjustment due to any consideration which arose affecting the fair compensation to be paid under that contract. I am perfectly willing to show you any of my correspondence if I had it here today.

Q. In other words, did you get any percentage on this?

A. I did not. I am not that kind of an engineer. Before you asked the question I anticipated what might be in your mind, but I am not compensated in that form.

Q. Well there is no use to get angry about it sir——

A. Oh not at all, not at all.

860 Q. —for it might be one way of compensating?

A. It might be, but it is not the way anybody can ever compensate me, and I will bring you any particular correspondence in regard to any particular contract if you wish evidence on that point.

Q. Well you may bring the correspondence as to the pumping machinery and all the large bills of machinery?

A. All right sir. Will you put it all in the record?

Q. I will put such parts as pertain to the matters that I inquire about.

Q. Mr. Wheeler you state that the original or initial stock of this company, as you understood it was $250,000 at the time you purchased. Now if that stock was paid in as it should have been under your charter there would of course have been $200,000 in the Treasury of the company upon its inception?

A. Not necessarily as I understand you.

Q. Now I will ask you if it is not a fact that at the completion of the original plant of the Knoxville Water Company on or before the first of January 1884, which you say cost about $128,000 there should not have been at least $70,000 in the treasury of the company after paying for the entire plant?

A. In the first place General the sum of $128,000 does not represent all the cost—it is only a part of the cost.

Q. Well perhaps that is subject to the statement that real estate was about $11,000?

A. Well it is subject to that and it is subject to something else, because my estimate includes various things which you have not included. However assuming that including all things which might properly go to make up the fair investment value on the
861 basis of my analysis or reasoning, there still remain other things to be taken into account. Moreover as I have stated my understanding is that that stock was issued in consideration of a contract—in other words it was paid in purchase for a certain works. I have not dealt with the works as having been capitalized at $200,000, but that was the method, I understand, this company acquired its works and it did pay its paid-up stock for those works. It may have paid a large price if you assume that stock was worth

par. I understand that to be the way in which it acquired its works.

Q. Are not all the initial subscribers to stock of a corporation worth par under such a contract as you have in this case. Ain't they required to be paid in and made a debt by the charter?

A. That involves a legal question. I suppose your question is directed to a charter in this state. If extended to other states, such contracts as I have referred to are made, and the stock is in good standing as paid up stock.

Q. Wasn't $200,000 ample and more than ample to have paid for the original plant and left a considerable surplace in the treasury of the company?

A. Probably to pay actual disbursements, yes, but that leaves unconsidered, and I leave unconsidered what the value of the services of the organizers and promoters might be. I am not undertaking to deal with that.

Q. What services did they render?

A. I say I am not undertaking to deal with them and hence cannot undertake to enter into particulars.

Q. At what date was the $85,000 debenture bonds issued?

A. I do not know of my own knowledge but I understand
862 by information that they were issued on two or more different dates. The books which I testified as to sending for a few days ago perhaps will afford some light on that subject—I cannot give it.

Q. What rate of interest did they bear?

A. Six per cent.

Q. How much interest has this company paid on those debenture bonds? ?

A. I am unable to tell you that. So far as I know they have paid interest in full from the time of their original issue down to March 31st, 1901.

Q. At what price were those bonds sold to the original holders?

A. I am unable to inform you as of my own knowledge.

Q. Do you not understand that they were sold at a discount from the face value?

A. I think I have inferred from something I have heard, which I do not now recall, that they had to be placed at a discount originally.

Q. Interest was paid on them at the rate of six per cent. on their face value was it?

A. So, far as I am advised it was.

Q. And they were held at the time of your purchase by the gentlemen, who held the stock of the company were they not?

A. Not entirely; in part I think they were.

Q. How much?

A. I am unable to tell you what the amounts were at present.

Q. They were gentlemen who were original subscribers to this company were they not?

A. No, sir, I think the gentlemen of whom I purchased here were not the original promoters of the company. I think they acquired their interests after the original construction was completed.

Q. Were they not stockholders in the company?

A. Not original stockholders.

863 Q. At the time you purchased they had control of the company?

A. I have heretofore stated that I purchased a controling interest of these gentlemen.

Q. And the interest on these bonds were paid to them?

A. It was paid to the holders of the bonds whoever they might be, but I cannot name them, I understood however there was quite a large number of those holders.

Q. Do you know for what purpose those bonds were issued?

A. I am unable to say. I suppose to provide funds no doubt for the extension of the works of the company, or else to reimburse arrears of earnings upon the original capital.

Q. Don't you know that no part of the subscriptions to stock was ever paid in?

A. Oh, but I mean upon the original capital. I understand that there was an issue of bonds made at the early stage of the work providing a substantial part of the original capital, which issue of bonds bore interest, and which interest was paid.

Q. At what date was this property mortgaged to the limit of $125,000 provided in the contract?

A. I am unable to state specifically, but at or during the original period of construction.

Q. Have those bonds been at interest ever since?

A. Yes, sir.

Q. What rate of interest did they bear?

A. Six per cent.

Q. Do you know at what price they were disposed of?

A. I do not.

Q. Who were the purchasers of those bonds?

A. I understand they were issued under that construction contract to which I have referred.

Q. Who held them at the time you became interested?

864 A. A large number of owners, banks and other investors.

Q. Did the gentlemen you purchased from hold any of those bonds?

A. Not so far as I know. They may have done so, but I am not informed on that point.

Q. And you understand they mortgaged the property to raise money for the original construction?

A. I understand that the bonds were paid as part of the consideration for the original construction.

Q. And the company had a capital of $200,000?

A. Of $200,000 stock.

Q. And the cost of construction was $128,000 outside of the real estate as you have estimated it?

A. I have estimated certain parts of the cost outside of the real estate.

Q. Mr. Wheeler, the other day you stated that from a certain date you were compensated as supervising engineer on one per cent. on the

gross earnings of the companys, but you were unable to state the amounts paid you under this contract with the company but said you would get it. Have you those, amounts yet?

A. No, I think I suggested that the Treasurer with his books would be the most competent witness upon that point.

Q. If you can I would like for you to state it?

A. I will go to the Treasurer and see if I can get the information.

The further taking of this deposition was adjourned until Tuesday afternoon, November 18th, at 2:00 P. M.

865 The further taking of this deposition resumed at 2:00 o'clock P. M., November 18th, 1902.

Q. Mr. Wheeler on page 90 of your examination in chief under the general head of additions during the year ending March 31st, 1901, and sub-heads "B" and "*b*" I find this "1800 brick in lime mortar at $13.00, $244.00, who laid those brick for you?

A. Specifically I cannot state, but I am informed and believe that nearly all of our brick work that has been constructed directly by the company, has been laid by labor furnished by a bricklayer, who is at the head of one of your Labor Unions, but I cannot call him by name.

Q. Is his name J. B. Butcher?

A. I am not certain, Mr. Kimball told me, and he can give you the information; I have met him but I am not certain about his name. This, however, I will say includes the price of the brick and all the supplies that enter into it, which were purchased I suppose directly by the company. The labor alone was furnished by the party to whom I have referred.

Q. On page 94 of your examination in chief I find under head "I" designated as "intake Tower" this item "460 cubic yards Portland cement concrete at $9.00 complete, $4,140.00," where was this concrete laid?

A. It is laid in the Intake Tower, which is set in the margin of the river opposite the pumping station below water and above water.

Q. By whom?

A. By labor employed by the company under the supervision of the superintendent.

Q. Have you the items that compose this specific item of
866 $4,140.00 in a separate statement?

A. No, sir, I have not. That is my estimate of the fair cost of such work. This concrete intake tower is a structure which contains forms the details which had to be worked out with a good deal of care for the admission of water, and is perhaps as expensive a form of concrete work as is often erected. I don't know of anything in this vicinity that would compare with it in that respect.

Q. On page 105 of your examination in chief I find this item, to wit; "Extension to settling basin #2,341.52" by whom was this work done?

A. The construction of this work were by the company and under

the supervision of Mr. Kimball. The plans of all this work to which you refer was designed in my office and made up by me, and also the specifications and all instructions for carrying out the work. The details of that item you will find on page 83 of this deposition.

Q. On page 181 of your examination in chief you have stated that the amount of the interest bearing indebtedness of the Water Company March 31st, 1901, was $824,500.00? Will you please state in detail what constituted this indebtedness?

A. In answer to that question I would say that that information was furnished me by the Treasurer, by whom I am informed that the interest bearing obligations of various kinds outstanding as of March 31st, 1901, were as follows:—

First Mortgage 6% Bonds	$150,000.00
Debenture Certificates 6%	85,000.00
Preferred Stock 6%	295,000.00
Notes payable	251,500.00
Cash loans	43,000.00
Total	$824,500.00

867 Q. To whom are these two latter amounts due?

A. I cannot answer you fully, but I will to the best of my ability. The notes payable are due various Banks, and I think some personal loans. The cash loans I think the Treasurer can testify about more satisfactorily than I, but they are in effect cash loans made to this company, as I understand it, (but this is subject to correction), by the Treasurer, by other Water Companies, or by the Wheeler Reflector Company, or by the Treasurer himself acting as an intermediary between this company and those companies. That is by way of information, but if any further inquiry is desired along that line, I would suggest that it be made direct to the Treasurer.

Q. Has the interest been paid on these sums?

A. Yes, sir, the interest is always paid on those loans.

Q. They all bear 6%?

A. All bear 6% according to the face of those evidences of debt, to wit, with reference to the First Mortgage Bonds, Debenture Certificates and Preferred Stock; the Notes Payable and Cash Loans bear from time to time different rates of interest, sometimes they are above 6% and sometimes below 6%, but specifically I am unable to advise you as to just what the status was March 31st, 1901, with reference to Notes Payable and Cash Loans.

Q. From what date has the Company paid 6% on the Preferred Stock?

A. From the date of its issue, to wit, the first issue was made in 1894 of $175,000., this is according to information furnished me by the Treasurer; in 1895 the amount outstanding was $275,900.00; in 1896, $293,000.00; in 1897, $295,000.00, and has so continued down to March 31st, 1901.

868 Q. This is the Preferred Stock which you have heretofore stated was issued to Wheeler & Parks under the contract of November, 1893?

A. Substantially all of it; I think all of it under that contract.

Q. When was the debt designated as Notes Payable for $251,500.00 created?

A. The debt under that head has been variable during the entire period in which the present managements has been identified with the company.

Q. When was the last item of indebtedness, the cash loans of $43,000.00, when was that created?

A. The company has been carrying cash loans ever since 1893 varying in amount from time to time.

Q. What amount of discounts enters into this last item?

A. I am unable to tell you.

Q. Discounts do enter into that to a considerable extent don't they?

A. I don't know what you mean; in what aspect?

Q. Well, I mean the amount is swelled by the amounts paid in excess of the ordinary rate of interest?

A. Not as I understand you, so far as I have any knowledge of the facts.

Q. Those notes have been made from Banks and at banking rates, haven't they?

A. Not always. I think I have already told you that the cash loans were made of other companies. The notes payable have been notes given to Banks and money lenders.

Q. Outside of the interest paid on Preferred Stock of $295,000.00, what dividends if any have been paid on the common stock?

A. Nothing whatever, in any way, shape or manner.

869 Q. What is the whole amount of common stock outstanding?

A. It occurs to me this moment that perhaps I ought to modify my answer to the last question regarding the payment of dividends on common stock. Of the additional common stock issued to Wheeler & Parks under the contract of November, 1893, a substantial portion of it was sold in small lots, with the guarantee on the part of Wheeler & Parks to pay out of their private resources 3% per annum up to a certain time, which covered a period of from 2 to 3 years, and Wheeler & Parks paid that interest or dividend upon such amounts; with that exception no dividend has been paid, and the company has never paid any dividend whatever upon its common stock. The amount of common stock outstanding as of March 31st, 1901, was 6450 shares or $645,000.00 of par value.

Q. The preferred stock has at all times received 6% interest on the face value of it, has it?

A. Yes sir, ever since it was issued.

Q. Turning to page 107 of your examination in chief, I notice that you there figure on the estimated value of the plant as shown in the preceding portion of your deposition, an additional 20% for certain purposes, this is in addition to the 20% that you figured for engineering services, contractors' profits, etc., as shown in the preceding parts of the account, is it not?

A. Yes sir.

Q. Taking up the items for which you allowed this lumping sum amounting to $142,275.90, in the order in which they are stated in your deposition on page 107, I will ask you what has the company paid to any one for general administration services that goes into this item?

870 A. So far as I recall or my knowledge goes, nothing has been paid or appropriated to the items referred to there, unless it be in whatever value there is in this common stock.

Q. What is the value of the common stock—the market value of the common stock?

A. It is difficult to say; I don't suppose that its market value is a definite quantity; it has changed hands at various prices.

Q. Does the company recognize any legal obligation to any one, and if so to whom, that is unpaid for general administration services?

A. Unpaid in excess of what? In excess of its cash disbursements on its own books?

Q. Yes sir.

A. Yes sir, I think it does.

Q. To whom is such debt due?

A. To the holders of its common stock in whatever value there is in the assets of this company above the amount of cash as appears as disbursed according to the books of the company.

Q. What part of this item of $142,275.90 do you ascribe to general administration services?

A. ¼ or 5% out of the whole 20%. At another place in my deposition you will find that I have separated the percentage which I ascribe to general administration services and expenses not compensated in salaries or charged to operation, contingencies, legal services and expenses, litigation, charter and franchise charges and allowances, etc. as 5%.

Q. Taking up the next item in the order of its enumeration in your deposition, what expenses not compensated in salaries

871 are charged to operation, has the company paid and to whom?

A. I think I have disposed of that part of the question in what I have stated about the 5%.

Q. What has your company paid on contingencies, such as you mean by that term in the enumeration of items?

A. I could not tell you about the details of actual payments made by the company. If I may explain, I am assuming in my deposition and in my analysis that 5% is a fair amount to allow for the services, expenses, contingencies, etc. enumerated in the first part of this paragraph to which you are alluding on page 107 of this deposition. Whether it has actually paid more or less, I don't know. I have simply assumed that 5% is a reasonable allowance for those items.

Q. Has it paid anything that you know of on such contingencies?

A. It has paid something for litigation.

Q. I am not asking you now about litigation?

A. Well litigation is included under this head.

Q. Do you know of their paying anything on contingencies, such as you intend by that term?

A. For details I shall have to refer you to the Treasurer.

Q. Taking up the next item in the order of enumeration, what have you paid for legal services and expenses?

A. I could not undertake to tell you.

Q. What have you paid on litigation?

A. I could not tell you.

Q. What have you paid on charter and franchises?

872 A. I could not tell you.

Q. I see you have included in the latter item "renewal thereof from time to time, contract?"

A. Yes sir.

Q. "And costs and arrears expended and incurred in creating and building up the business."

A. That's in another item.

Q. Now what have you incurred on account of renewal of your charter and franchise?

A. I could not tell you.

Q. Has your charter ever been renewed?

A. It has been amended.

Q. That amendment appears in this record, doesn't it?

A. I am not clear about that, I have not that definitely in my mind at present.

Q. Your franchise was given to you wasn't it by the city of Knoxville by a mere ordinance of the city?

A. I think we have discussed that, and I think I have answered that heretofore; I don't consider it so; it was given as a consideration of contract.

Q. What have you expended directly, or your company rather, expended directly in the matter of contract, time, costs and arrears expended in creating a live and going plant?

A. If you will allow me, that "contract" should not be included in that.

Q. What contract do you refer to?

A. Any contracts, the negotiations of which call for expenditure of services or money, outside of the kind of expenditures which I have taken into account in making up the preceding part of this estimate.

873 Q. Do you refer to contracts made before the incorporation of your company, or during the running and operation of your company.

A. Both of them.

Q. Such services are rendered, are they not, by salaried officers of your company?

A. Sometimes they are and sometimes they are not. There has been a great deal of service devoted to the attempt to negotiate contracts by those that were neither officers or attorneys of the company.

Q. What contracts of that character can you enumerate?

A. Well that would refer to any services or expenditure by any-

body in behalf of the company in negotiating, for instance the original contract between this company and the city of Knoxville; the services which attended the attempt to negotiate the franchise contract passed by the city of Knoxville in 1891, which was afterwards vetoed by Mayor Kern, and the negotiation of the contract ordinance passed by the city Council in 1893, and which was afterwards vetoed by Mayor Thompson, and in other negotiations between the Water Company and the city of which there have been some instances, and which were conducted by those who were not salaried officers, and not compensated for such services.

Q. Don't you think this item ought to be off-set by the time, services and expenditures that the other party with whom you were trying to contract?

A. Do you mean by the fact that the city was subjected to some time and expense?

Q. Yes.

A. No sir, I do not, think the fact that some one else
874 incurs expense is any reason why allowance should not be made for service or expenses incurred by this company.

Q. Now what sum, and I mean specific sum, has your company contributed directly or incurred in creating and building up the business, and creating what you denominate as a live and going plant?

A. It has contributed the difference between what would have been a fair rate of interest upon the return for the reasonable amount of capital prudently invested in its plant from the time that investment was made onward and the lesser return which that plant actually afforded that capital. In other words, it has contributed whatever arrears there may have been of deficiencies in the returns upon this investment during the early development of its business. It is the insufficiency of the revenue to afford a fair return upon the investment made therein during development period.

Q. You proceed upon the hypothesis that the organizers and subscribers to the stock of the concern had actually paid in their money and were laying out of the use of it during that time, do you not?

A. I priced upon the theory that somebody had contributed the necessary amount of capital, and were entitled to a fair return upon that capital whether that capital was in form of cash or services.

Q. Suppose in point of fact they had not paid a cent upon the original stock?

A. It does not make any difference, the plant was here and some one incurred the expense or rendered the services which it represents.

Q. If the capital stock wasn't paid in, then the gift of the franchise by the city of Knoxville would be the sole asset of the
875 corporation, wouldn't it?

A. No sir, it would not. You cannot create a plant out of nothing, even if the franchise is donated to you.

Q. That $200,000. of stock subscribed, do you think it was a necessary and prudent expenditure to issue at a discount $150,000. of bonded indebtedness.

A. I think you will have to excuse me from passing upon the necessities which were laid upon the original promoters of this concern with reference to the manner of capitalizing it. I can only say that the manner of capitalizing works of that kind at that time was one universally adopted so far as my knowledge goes, and my knowledge extends further back than that date.

Q. Do you mean it was usual for a number of gentlemen to subscribe to the stock of a concern of this sort and not pay it in and bond it; wasn't the franchise granted by the City to build the plant by bonds?

A. My answer was directed to the proposition that it was usual and customary to capitalize a concern of this sort by the issuance of bonds and stocks, the face value of which is substantially in excess of the necessary approximate cash payments disbursed in the construction of the work, and I know of no other way in which such a works could have been financed or in which such works were financed as of that time, or at subsequent times by water companies.

Q. Mr. Wheeler, under the charter of your company, you have the right and have had the right from its inception to fix the rates of charges for water in the City of Knoxville at any amount you chose under the maximum rate of 5 cents per hundred gallons, isn't that true?

876 A. We had supposed we had until this issue arose.

Q. Have you not done so at all times without let or hindrance from the city until the ordinance of March 31st 1901?

A. If I understand the full significance of your question, I should say we have not "without let or hindrance" that is to say I mean by that, that we have as a matter of good policy undertaken to defer to some extent, to our understanding of public sentiment, but particularly I refer to the limitations which we had supposed were in the nature of a contract binding upon both parties as set out in the ordinance of 1899.

Q. What ordinance do you refer to of 1899?

A. The ordinance which allowed the company to increase its mortgage debt and to acquire the Lonsdale Beaumont property in consideration of which the company contracted, as it supposed, with the City of Knoxville, to limit the rates to be charged by it for water to certain schedule rates set out in that ordinance.

Q. Well now, prior to 1899, subject to the limitation of a maximum rate of 5 cents per hundred gallons of water, you claimed the right and exercised it, didn't you, to fix the rate for charges of water in Knoxville at any figure you chose?

A. The legal right, practically yes, bearing in mind of course that the rates for North Knoxville were fixed by an ordinance of 1891, which was quite different from the provisions of the original contract, making the limit of 5 cents per hundred gallons. When that contract with North Knoxville was made, shortly afterwards the rates for the City of Knoxville were voluntarily revised by the Water Company, and made as shown here a few days ago, to conform in a general way, but not in all details to the North Knoxville

877 schedule. In other words we recognized the policy and the wisdom of treating, as nearly as may be different customers

of the same works upon an equal basis, and in respect to whatever schedules of rates this company has established from time to time under its supposed right to determine rates, it has done so unquestioned until this issue arose that such rights and rates were to continue indefinitely, free from any control whatever by the City except to the extent of the limitations at 5 cents per hundred gallons provided in the original contract.

Q. Your Company fixed the rate of April 1st 1895, did it not?

A. It did.

Q. It has continued in force from 1895 down to the present time so far as the practice of your company is concerned?

A. Substantially so, except with respect to West Knoxville.

Q. You spoke yesterday of there possibly being some special contract with customers. Have you some special contracts with customers in this city giving them water at special rates other than the schedule rates?

A. Well there is a special contract with the Southern Railway Company, which I happen to know about, but whether there are any others or not, I am unable to say.

Q. Is it not your understanding that you have others?

A. I have an impression there are but I have no personal knowledge of them; I think perhaps there are a few others.

Q. How many parties or consumers of water in the City are you furnishing water free of charge?

A. I don't think we have a single free customer. That is a practice which we have undertaken to do away with. When we came here, I think we found a few free customers, but I think the
878 free water service has ceased.

Q. It had been the custom of the company before you took charge of it?

A. I think there were some free services originally.

Q. To what extent?

A. I would not be able to say. That has not come under my supervision.

Q. How long did they continue to receive water free after you went into the management of it?

A. I am unable to say but I think they were nearly all discontinued within a very short time; the employees of the company and the officers of the company are even required to pay their water rates.

Q. That is the present practice?

A. Yes sir that is the present practice.

Q. Mr. Wheeler what part of your present plant is inside of the city of Knoxville as it existed, or rather what part is outside the city of Knoxville as the corporate limits of the city existed at the time of the original construction in 1882, 1884?

A. I cannot answer that; I would have to get that of Mr. Kimball, and it would be second-handed testimony for me to give, and I think Mr. Kimball had better give that himself.

Q. The trouble is you have given an estimate of the proportion inside and outside the city?

A. I had Mr. Kimball to go over all of these computations with

me, and he understands it perfectly. If it is deemed proper I will ask him to prepare a tabulation, or summation of the works within and without the lines you have mentioned.

Q. I want the part of it that is outside of the City as it existed at that time, and of what it consisted?

A. Personally I don't know what the lines were as of those dates.

Q. Don't your map show that?

A. My maps which embody the survey which I have made as of 1890, 1891, show the lines I think as they were at that time, but whether they were the same in 1882 and 1883, I don't know, but I think they were not.

Q. Then you say you don't know where the lines of Knoxville were from 1882 to 1884?

A. No sir, I do not.

879 Q. Then will you state what portions of your present plant are outside of Knoxville as it existed in 1890-1891 when you became connected with the plant?

A. I have had such a division made as of the date of March 31st 1901 as the municipal lines were at that time, and as to the property in use at that time, but it would involve a good deal of work to make such a division as of ten or twelve years earlier, but if appropriate and necessary to a determination of this cause, I will ask the superintendent to prepare such a division?

Mr. CALDWELL: On account of the large amount of labor and the apparent irrelevancy of the statement of the kind called for, counsel for plaintiff would ask the Master to pass upon the question as to whether or not plaintiff should be required to furnish such a statement.

MASTER: Well it is apparently irrelevant; what do you say about it Mr. Pickle.

Mr. PICKLE: I want Mr. Wheeler to go out of the roo- if I am to discuss that.

(Witness here retires from the room.)

General PICKLE: Well in the first place, Mr. Wheeler makes an estimate of the percentage of this plant as on the outside of the City in 1901. They say that the income derived from the plant has been insufficient through all these years to meet its operating expenses and just obligations under the contract with the City of Knoxville as it existed then, they undertook outside work, and therefore the inquiry must come down as to whether the plant operated inside the City of Knoxville was sufficient at that time to have paid

880 operating expenses, and paid other just charges, and thereby have prevented an accumulation of the debt they say has been accumulating in its operation, and in order to do that I must show that they had a lot of ineffective works on the outside of the City, and was carrying a lot of dead capital, or practically dead capital, and I have to show what it is.

The MASTER: The exception is sustained for the present, if for no other reason than as the witness says it involves a large amount of labor to prepare it.

General PICKLE: The witness has not stated that.

The MASTER: Yes, I think he did, but maybe not in answer to a question.

Mr. CALDWELL: Stenographer refer to the answer and read it again.

(Stenographer reads) "I have had such a division made as of the date of March 31st 1901 as the municipal lines were at that time, and as to the property in use at that time, but it would involve a good deal of work to make such a division as of ten or twelve years earlier, but if appropriate and necessary to a determination of this cause, I will ask the superintendent to prepare such a division."

General PICKLE: I except to the ruling of the Master and insist upon an answer inasmuch as under the reference secured by the plaintiff in this case, and throughout the course of this examination, it seems to be the plaintiff's contention that the revenues of this company have been insufficient to pay its operating expenses and just charges through the years including 1900 and 1901 and previous and subsequent years, and therefore it is competent to
881 show that they were carrying on the outside of the City of Knoxville, without authority of law, a large amount of dead capital in works that they were not authorized under their contract with the City of Knoxville to construct or operate, and therefore should be excluded from any account of the operations of the Company, or construction account of the Company for the years prior to 1901.

The MASTER: Well you might as well ask the witness another question, as the witness says he does not know it, and I do not require him to go through the labor of making it out.

Q. (Witness here returns into court-room.)

Q. Will you or not make out and furnish the statement requested in the last question?

Mr. CALDWELL: We object to that for the Commissioner has already ruled that the witness is not required to do it.

The MASTER: The Master rules that the witness does not have to answer that question. That is already covered by the ruling of the Master already.

Q. Well in a general way I will ask you if all of the plant situated in what is now known as North Knoxville wasn't on the out-skirts of the corporate limits of old Knoxville in 1890 and 1891?

A. I am unable to say just what were the municipal lines of Knoxville at that time. I think the territory which afterwards comprised North Knoxville was then outside of the old City, but that is merely an impression, as I don't know when North Knoxville was incorporated.

Q. Is it not a fact that all of the territory comprising
882 what is known as West Knoxville was outside of the city at that time?

A. I have no definite knowledge about that fact. If West Knoxville was incorporated prior to my coming to Knoxville, and North Knoxville was incorporated prior to that time, then it goes without

saying, that that territory was outside of the municipal lines when I came here.

Q. Wasn't the territory known as the old Tenth ward outside of the City of Knoxville at that time?

A. My answer would be the same with reference to North and West Knoxville. I am not sure that the Tenth Ward was incorporated, or what it comprised when it was incorporated.

Q. I will ask you to state what portions of your plant were outside of the limits of the old city of Knoxville at the time of the consolidation ordinance, which was accepted by your company and passed about October 1899?

A. I am unable to answer that now. I have made no division, and have had no division made as of a date prior to March 31st, 1901, and so cannot answer any question at present along that line.

Q. Well now, what have you excluded in your statement as of date March 31st 1901, what particular portions of your plant as you have stated heretofore, if you have stated it, and if you have not, state it now, as being outside of the city as it existed at that time?

A. I hand you herewith a summary of the plant outside of the corporate limits of the city, as such limits existed March 31st 1901, in which the investment cost or value of such portions of the plant are stated under each head or classification thereof, as al-
883 ready testified to by me, which summary shows the relative construction cost or invested value of that portion of the plant required for use, and in connection with the plant within the city limits, and that portion of the plant not required for use with the part of the plant which is within the city limits. If greater detail is desired, I shall have to furnish it at a later date.

Q. The statement that you furnish affords no information as to the specific portions of the plant that you figure upon as lying outside of the city; what I want is the portions of the plant and where situated, so that I can verify your statements and your percentage as figured?

A. Where situated?

Q. Yes.

A. That calls for a degree of refinement of detail which I have not gone into in any part of my testimony, and which would still further increase the labor.

Q. Unless you can do this, we have no means of knowing what you have figured upon, and no means of verifying or contradicting the quantities that you have set apart as being situated outside the city. While I don't want to impose undue labor upon you, it is essential to an intelligent investigation of this question that we have the matter in more detail.

A. I can furnish you the length of pipe and various sizes and other works outside the city limits, probably by tomorrow morning; I think I have them in the original details from which this summary was made up, but to annex to that a geographical description of the location of each of those portions, would involve a good deal of additional work, but it can be done. Without that I recog-
884 nize the fact that you are unable to identify the location of every particular piece of pipe which might enter into the list,

which I would give you, but even if I furnish it to you, you could not prove the correctness of my testimony without you go on the ground and dig it up, and you would only have my oath for it then as now. Anything which the Master says will assist him in arriving at his conclusions I will gladly furnish.

COMMISSIONER: Well we will see this data in the morning. The defendant is entitled to full cross-examination on that point, if it is material, but just how far it can or should go, I will see from that data in the morning.

The further taking of this deposition was adjourned until Wednesday November 19th 1902 at 9:30 o'clock A. M.

885 WEDNESDAY MORNING, *November 19th*, 1902—9:30 a. m.

Continuation of cross-examination of WM. WHEELER:

(The WITNESS): General Pickle I hand you here the original contract which Wheeler and Parks made with C. M. McGhee representing himself and others, showing the basis upon which the controlling interest in this company was acquired?

Q. Will you make that contract a part of your deposition?

A. Yes sir, said contract is in the words and figures following:

"Knoxville Water Company.

This agreement made and entered into on this the twenty-second day of December, 1890, between Wheeler & Parks of Boston, Mass. parties of the first part, and C. M. McGhee of New York, party of the second part:—

Witnesseth:—That Whereas, said party of the second part and his associates have this day sold and transferred to said first parties, Thirteen Hundred and Fifty (1350) shares of the capital stock of the Knoxville Water Company at Fifty (50) dollars per share of which about ten (10) dollars per share has been paid in hand the receipt of which is hereby acknowledged, and for the balance, the said parties of the first part have executed to said second party their notes with said stock as collateral, of even date herewith as follows:

One note for Fourteen Thousand dollars ($14,000) due at forty days:

One note for Twenty Thousand dollars ($20,000) due at three months.

One note for Twenty Thousand dollars ($20,000) due at five months.

All of said notes bear interest from date at six per cent.
886 until paid, and provide on their respective faces that they may be paid at any time before maturity if said first parties so elect.

And Whereas, C. M. McGhee, R. N. Hood, E. J. Sanford, H. H. Taylor and William Ogden, hold certain of the debenture bonds of said Knoxville Water Company, supposed now to be about sixty-five thousand (65,000) dollars.

Now therefore in consideration of the sale made as above stated, and the premises above recited, it is agreed as follows:—

First. That said Wheeler & Parks contract and agree to purchase all of the debenture bonds of said Water Company now held by C. M. McGhee, E. J. Stanford, R. N. Hood, H. H. Taylor and Wm. Ogden, at a time that they, Wheeler & Parks, may elect, prior to putting a new or additional mortgage on the property of the Knoxville Water Company, and said Wheeler & Parks agree to pay par, and any accrued or unpaid interest for said debenture bonds at the time they are delivered.

Second. Said first parties hereby contract and agree that they will not place any mortgage on the property or increase the bonded debt of said company until said debenture bonds are purchased and paid for, and that the stock of the company shall not be increased, and the stock of said company shall in stockholders' meetings for the election of directors of said company, be voted for a Board of Directors, who shall vote for and elect R. N. Hood, President of said Company until said debenture bonds are taken and paid for by said Wheeler and Parks.

In witness whereof said parties of the first part and said party of the second part have executed this contract in triplicate, the date above written.

WHEELER & PARKS.
C. M. McGHEE.

887 Q. My last inquiry at adjournment yesterday called for certain schedule of properties of the Water Company lying outside of the city as of date March 31st, 1901. Have you that schedule at hand and if so will you file same as an Exhibit to your deposition?

A. I hand you a schedule entitled "Distribution Pipes and Appurtenances outside the corporate limits of the city of Knoxville as said city existed on March 31, 1901." This schedule shows the location as to the street in which each piece of pipe is laid, the length of that pipe and its diameter, and is divided and apportioned as of the several dates which have been made use of in dividing and classifying the construction of the entire works in my direct testimony. This schedule also shows classifications and summations of such portions of the property outside the corporate limits without reference to streets but in which the amounts of the same kind of property, as for instance pipes of a given size are aggregated together, as of the various dates of construction already referred to; and finally it shows also a tabulation or aggregation of the whole of such property, regardless of the time when it was constructed, and the construction costs or investment values represented thereby in exact conformity with the relative values assigned thereto in my deposition referring to the complete property of the company, and it likewise shows the relative percentages of such values of such property that are or were within or without said corporate lines, all being comprised in 37 pages, numbered from "201 to 237" inclusive, and I make it Exhibit #7 to my deposition.

Q. Is the schedule just filed made up from percentages and actual measurements made by yourself, or from information, and if
888 from the latter who furnished you the information?

A. This schedule was made up under my directions by Mr. Kimball from his own surveys of the property and territory to which it refers; and I want to say that it was made up several weeks ago prior to the beginning of this hearing.

Q. When did the Knoxville Water Company first obtain control of the Lonsdale-Beaumont Water Company?

A. On or about the first day of January 1901, shortly following the passage of the Ordinance of the city of Knoxville in 1899.

Q. Had there been any preliminary agreement between the two companies prior to that time looking to the acquisition of the Lonsdale-Beaumont plant by the Knoxville Water Company?

A. Well for the specific facts on that I should have to refer you to the records or to the Treasurer—I will say to the records.

Q. Can you not state how the fact is?

A. The facts with reference to that purchase appear to be set out in Record Book No. 2 of the Knoxville Water Company containing records of the transactions of its directors on pages 91 and 92, containing a record of the meeting of the Directors held November 2nd, 1899, which record is as follows:

"Nov. 2nd, 1899. Be it remembered that at a meeting of the Directors of the Knoxville Water Company, had in the office of the President of said Company in the City of Boston, Mass. pursuant to due and legal notice there were present the following directors: Messrs. Harvey Wheeler, William H. Bowker, Elbert Wheeler, Elisha Thayer, William Wheeler and John F. J. Mulhall.

889 Thereupon Mr. William Wheeler, President of the Company called the meeting to order, and stated the object and purpose of the meeting to be to consider the matter of consolidation of the Lonsdale Beaumont Water Co. of Knoxvlile Tenn. with this company, said consolidation to be effected by purchase or otherwise, under power invested in this company by an ordinance of the City of Knoxville, dated Oct. 20th, 1899;

Thereupon after discussion, upon due motion, it was voted and determined:—

First. To purchase, subject to the approval of the stockholders of the company, the plant, property rights, privileges, franchises and all the corporate property of the Lonsdale Beaumont Water Company of Knoxville, Tenn. and as a consideration thereof, if said purchase shall be ratified by said stockholders of this company and agreed to by said Lonsdale Beaumont Water Co. to assume all of the obligations of said Lonsdale Beaumont Water Co. indemnify and save harmless Elbert Wheeler from all obligations assumed by him in purchasing and securing control of the stock and bonds of said Lonsdale Beaumont Water Co. and issue three hundred and thirty (330) shares of common stock of the Knoxville Water Company to the stockholders of said Lonsdale Beaumont Water Company in proportion to their holdings of stock in said last named company:—

Second. That the President of this Company be and is hereby

authorized and directed to submit this vote and resolution to the stockholders of this company, after giving them due notice for their action thereon."

Q. The Elbert Wheeler referred to in that action of the directors, is the Treasurer and was at that time of the Knoxville Water
890 Company wasn't he?

A. He was.

Q. This action seems to assume some previous action by Mr. Wheeler. Do you know what it consisted of?

A. In a general way only. He had been negotiating or confer-ing with holders of stocks and bonds of that company, the details of which negotiations or transactions I would have to refer you to him for.

Q. The Lonsdale-Beaumont Water Company was in financial distress at that time wasn't it?

A. Not to my knowledge.

Q. Among the items of real estate of the Lonsdale-Beaumont Water Company I find the "Tillery Springs lot, 14 acres $1,000." Was that the original cost of the lot to the Lonsdale-Beaumont Water Company?

A. I think not.

Q. What was the original cost of the lot?

A. I think the original cost was much greater than that, but the precise figures, I am not sure about.

Q. Have you any means at hand by which you could ascertain and give the original cost price of that lot?

A. I think the Treasurer may have deeds which indicate the cost, but personally I have nothing in my possession I think that would show that.

Q. Under the same heading of real estate of the Lonsdale-Beaumont Water Company I read as follows: "Pumping station lot on Middlebrook road and Third Creek about one and one-half acres, $1,000" Is that the original cost of that lot to the Lonsdale-Beaumont Water Company?

A. I think not.

Q. What was the cost of this lot to the Lonsdale-Beaumont Water Company?

A. I am unable to state at present from any information in my possession as to what the cost was to the Lonsdale-Beaumont Water Company.

Q. Was it greater or less than $1,000?

891 A. I am not sure about that.

Q. Another item under the same heading reads "rights-of-way, $500.00" and "water rights, $500.00" Do these items represent the original cost of these rights to the Lonsdale-Beaumont Water Company?

A. I am not sure about that. If you deem that important I think that information can probably be obtained through authentic sources.

Q. Was the cost greater or less than that?

A. The aggregate of these items are less according to my information and belief than was actually paid for them by the Lonsdale-Beaumont Water Company.

Q. Another item reads "Stand-pipe Lot, Beaumont addition $600.00" Is this the original cost to the Beaumont Water Company of this piece of property?

A. It is my impression that it is but I am not quite sure about it.

Q. I would be glad if you could furnish the original cost prices of these several items Mr. Wheeler?

A. I have refreshed my recollection by talking with Mr. Kimball and recall that the information which I had concerning the purchase price paid by the Lonsdale-Beaumont Water Company for its lands and rights-of-way, or certain of them, appeared in an abstract from the registry of deeds in Knoxville, which the Treasurer then had in Boston. The original deeds appear to have been burned in a fire here in Knoxville which destroyed the papers and records of the Lonsdale-Beaumont Water Company. The Knoxville Water Company has no copies of those deeds nor of any abstracts here in Knoxville. They can be obtained from the Register's office I presume.

Q. Have you stated anywhere in your deposition what portions of the property of the Knoxville Water Company lying outside the city limits as of date March 31, 1901 are still used to supply
892 water to the people of Knoxville?

A. I have testified upon that point.

Q. You have testified as to the per cent.?

A. I think I have also testified as to where that pipe was laid. In general the portion of the plant that lies outside the corporate limits as of March 31, 1901, that is used for the operation of the plant within the city limits comprises 16"-14" 12" and 10" main pipes lying in Mabry street, Bertrand street and Washington Avenue within the limits of what was formerly the Tenth Ward of Knoxville. Also the Stand-Pipe lot of the Lonsdale-Beaumont plant, the stand-pipe upon that lot, and the main pipes between that stand-pipe and the municipal lines.

Q. What portion of that has now been abandoned?

A. All that I have referred to is in use. I have excluded in other words in my answer anything that has been abandoned, and that portion of the works represents 5.32% of the total investment cost of the plant to which I have already testified.

Q. Is the Lonsdale-Beaumont Stand-Pipe still in use?

A. It is.

Q. Was it not contemplated when you acquired the Lonsdale-Beaumont plant, and is it not still contemplated that it will be abandoned?

A. No sir, I can anticipate no reason why it should be abandoned. It has never entered the minds of the management to abandon it; on the contrary we have made arrangements to scrape and clean it, and paint it and put it in perfect repair for continued use.

Q. On page "84" of your examination in chief in this case I find an item reading "Well and Appurtenances at Griffin Spring

$1,000" does this item represent the original cost to the
893 Lonsdale-Beaumont Water Company of this well and appurtenances?

A. Not specifically. That is like other items entering into the construction features of the plant to which I have testified, being an estimate of the fair investment value of the work including in that place with whatever pipe connections, gates and appurtenances are connected with the well.

Q. For what purpose was this well or spring used and is it used?

A. It was the source of supply used by the Lonsdale-Beaumont Water Company prior to the physical consolidation of that part of the plant with the plant of the Knoxville Water Company.

Q. That source of supply was abandoned after consolidation?

A. After that consolidation the source of supply was abandoned.

Q. Did the Lonsdale-Beaumont Water Company own real estate at this point?

A. I am not quite sure about that. Some of the supplying sources of the Lonsdale-Beaumont Water Company were leased, the lease being terminable, and I think that is one of those cases. The Treasurer or Mr. Kimball could give you the exact facts about that.

Q. I find another item relating to Well and Appurtenances *and* at Blanc Spring $750. Does that item represent the cost to the Lonsdale-Beaumont Water Company?

A. No sir, that is like the case to which you have referred. It means also an estimate of the fair construction value.

Q. Has this property been abandoned?

A. Yes sir, it has been abandoned as a source of supply.

Q. Do you know whether the Lonsdale-Beaumont Water Company owned any real estate about this spring?

A. I think they did not but I am not able to say positively about that.

Q. If they did is it anywhere included in this estimate of
894 cost of it?

A. Whatever lands or real estate or water rights were owned by the Lonsdale-Beaumont Water Company at the time it was consolidated with the Knoxville Water Company plant and was in us by the company, was included in the estimate which I have made in my deposition.

Q. Well specifically about this spring, is there any item included with reference to it?

A. Yes sir, as appears in the deposition an item of $750.00 for the well, but not for land so far as I am able to recall or learn upon referring to my deposition.

Q. I see on the same page there is an item of $250.00 for Well and Appurtenances at May and Nickle Springs? Does this represent the actual cost to the Lonsdale-Beaumont Water Company on this item?

A. That represents the actual fair construction cost as in the two other cases.

Q. Did the Lonsdale-Beaumont Water Company own rights about this Spring?

A. I understand they had rights, but I am not certain whether they owned any land or not; I have made no estimate for such land.

Q. In regard to the dead pipes lying outside the city Mr. Wheeler are they still in the ground—I mean generally speaking.

A. In general a pipe is disused and considered as disused when it is replaced by another or a larger pipe and in such case that pipe is taken up and the investment therein of the construction cost is credited, as I have testified with the net value of the pipe that is taken up. In the case of the gravity pipe line and its connections leading from the springs which supplied water for the Lonsdale-Beaumont Works to the pumping station of those works, the portion thereof that was laid with 12" cast iron pipe has been taken up and is credited for the value at which it went into the
895 original estimate less the price or cost of taking it up as appears on page 165 of this deposition. The vitrified pipe, or sewer pipe which constituted part of this gravity line, I think for the most part remains in the ground, as it is considered that without some present use for it, it would not pay for taking up.

Q. The three Wells that I have spoken of have all been abandoned as sources of supply for the Lonsdale-Beaumont Water Company?

A. I think so.

Q. How is it with reference to other pipe that has been abandoned and about which you have testified; I mean the dead pipe generally that you have figured as depreciation?

A. I don't think I have figured any pipe as depreciation except in the instances to which I have referred.

Q. Is there any of the dead pipe other than you have stated that is still in the ground?

A. I don't know of any. I should have to refer you to the Superintendent for information on that line.

Q. On page 85 of your deposition under figure "12" designated as "Improvements, Buildings and Machinery at Pumping Station L. B." I find item "impounding reservoir, excavated in solid rock, near creek, about 50 feet in diameter and 24 feet deep, with metal roof and appurtenances, $5,000." How many feet of excavation and at what price is included in this item?

A. Excavation on those dimensions would involve about 1745 cubic yards. I have not here the data showing the price which I assigned per cubic yard, nor the allowances made for the roofing and the gates, pipe connections, &c, which I included in that sum of $5,000. My present judgment, unaided by any such data as I might previously have had or made, is that such excavation made below the level of the creek as this was, would cost approxi-
896 mately $2.00 per cubic yard—perhaps a little more or a little less.

Q. This reservoir has it been abandoned or is it in use?

A. Well it is not in use because we are not using that pumping station or source of supply.

Q. On the same page and under the same figure entitled I find this item "Engine and Boiler House with excavation and grading $2500" what items make up this $2500—how much excavation grading?

A. I cannot give you those details at present.

Q. From what source did you get the information to make the estimate?

A. Very largely from data and measurements furnished me by our Superintendent, Mr. Kimball.

Q. Has this property, estimated at $2500 been abandoned also-

A. It is not in use for our purposes. It remains upon the property however.

Q. On the same page and under the same number and heading I find this item "2 Horizontal tubular boilers 54" diameter x 14 ft. long, with uptake and stack and foundations $2000" can you give the specific items which make up this $2000?

A. No sir I cannot at present give the items which did make it up.

Q. What has become of this property?

A. The boilers and appurtenances, so far as they were removable, have been sold, and credit therefor has been given as appears in my deposition concerning the depreciation under this item.

Q. At what amount do you credit that?

A. I have allowed a credit "on pumping machinery and boilers $1250.00." See page 165 of this deposition, and that price is the actual price or net price which the company realized for the boilers and pumping machinery to the best of my recollection and belief. Mr. Kimball can give you the exact figures about that.

897 Q. Does this credit cover only this $2000, or it and the succeeding item of $300?

A. It covers those two items. It is an off-set for those two items. In addition there is a credit for $100 on "brick and materials in buildings estimated at $100"?

Q. Does that not cover the additional foundations $300?

A. No sir I think that is considered as the fair or probable sale value of the brick and materials left in abandoning pumping station building?

Q. Well these would be in the foundations wouldn't they?

A. I don't think the brick in foundations would be worth moving.

Q. On same page, to-wit: 85 in your examination in chief under the same figure "12" and the same heading I find an item for "2 Deane Duplex compound, non-condensing, pumping engines, covered and lagged with Russia iron, with boiler feed pump, gauges, lubricators, oilers &c., 12 & 18½ x 10¼ x 10" stroke f. o. b. cars $2200.00." What was the actual cost to the Lonsdale-Beaumont Water Company of this machinery?

A. I have no means of knowing.

Q. From what source did you get the information to make this estimate?

A. I don't recall specifically at this time whether I had any information bearing upon the cost or contract for this original machinery. I have knowledge or data as to the cost of such of that kind of machinery from year to year for many years past, and my pres-

ent impression is that I made use of such general data as a basis of this estimate.

Q. Do you know by whom this machinery was manufactured, or from whom it was bought?

A. It appears in my deposition that they are Deane pumping engines, and I think I may say that they were furnished by
898 the Deane Steam Pumping Company of Holyoke, Massachusetts.

Q. How long had this machinery been in use?

A. Since its original installation about the year 1893.

Q. To whom was it sold?

A. I could not tell you. Mr. Kimball will be able to give you that.

Q. All of it has been abandoned or was abandoned upon your consolidation of that company?

A. Yes sir all has been abandoned subject to the salvage to which I have testified.

Q. Have you the books of the Lonsdale-Beaumont Water Company, the Treasurer's or other books showing the expenditures of that company on account of its works?

A. No, I understand there are no such books in existence. My information is they were destroyed by the firse to which I referred this morning.

Q. Turning to page 86 I find under the figure "13" at top of page the item "Stand pipe L.-B. 25 ft. diam x 70 feet high including foundation $6,400" Is that stand pipe still retained in use by your company?

A. It is.

Q. Did the Lonsdale-Beaumont Water Company own real estate where it stands, and if so how much?

A. They did own a lot of land on which it stands—the dimensions of the lot I have not at hand now.

Q. Is the cost of the real estate figured into the cost of the stand pipe in this item?

A. No sir the cost of the real estate appears on page "84" as "$600" to which I have heretofore referred.

Q. Is that $600 the actual cost of the stand pipe lot?

A. I think I have just testified that my understanding is that it was the actual cost—at least the cost that appears on the records at the Registry of Deeds.

Q. What items make up this $6400—how do you get that
899 amount?

A. It is my estimate of the probable fair cost of the construction of the iron work and the foundation upon which it stands and its immediate connections with the pipe system.

Q. And you have figured on to that amount 20%?

A. Yes sir as a fair allowance for engineering-contractor's profit and use of capital as heretofore explained.

Q. I notice that you have a number of items for replacing macadam. Was this done by the regular force of the company ordinarily?

A. Ordinarily I understand that it was.

Q. How do you figure the amount of macadam that was to be replaced?

A. As near as I recall, that estimate is based upon the as-umption that macadam is replaced for a width of two and one-half or three feet.

Q. Well which, 2½ or 3 feet?

A. Well I am not quite sure. That was based upon information furnished me by Mr. Kimball. I think he has the data and will be able to give you the data which he supplied me for that purpose.

Q. Mr. Wheeler at the time the Knoxville Water Company acquired the Lonsdale-Beaumont Water Company, you understood and intended that a large part of the property would be worthless to you and would be abandoned, did you not?

A. We understood and expected that considerable portions of it would be abandoned. We also, if I may properly add, understood and expected of course that no abandonment would be made which did not contribute to a greater economy in the operation of the consolidated plant from one source than would attend its operation from both sources, if none of it had been abandoned. In other words the whole transaction and consolidation involved economies which diminished the burden to be laid upon rates. If such abandonment had not taken place and the Lonsdale-Beaumont plant had been
900 continued in operation independently by this company, whatever burden would thereby have remained to have been satisfied out of rates, would be greater than it is now.

Q. Did not the consolidation involve the dismantling of the West Knoxville plant as an independent plant and readjustment of conditions to make it a part of this plant and thereby necessitated considerable immediate outlay?

A. Some outlay was actually made in connection with the combination of the two plants; whether it was made immediately or prior to that combination, or at some subsequent time, I am now unable to say.

Q. That was done with a view to a prospective increase of business of a proportionate reduction of expenses, was it not?

A. The consolidation of the two plants, do you refer to?

Q. Yes sir and its expenses.

A. Oh yes, it was done with a view to rendering the present and future service upon a basis of the utmost possible economy and efficiency.

Q. Well it operated, or will operate in that direction, will it not?

A. Well I can only tell you how it has operated up to the time of this inquiry I think. The figures as to the actual results would have to be furnished you by the Treasurer. It was done with a purpose, as I say, to introduce economical management.

Q. Well if it has not operated in that direction then it was an injudicious move, wasn't it?

A. I should say it is clearly injudicious to do anything that does not contribute to economy and efficiency of operation.

Q. The same purpose was had in view in bringing in the North Knoxville plant wasn't it?

A. Generally speaking I should say that it was.

Q. In other words your view was that the Knoxville Water
901 Company could operate more economically in proportion to the service rendered by including North Knoxville and West Knoxville within its limits of operation?

A. Relatively speaking yes; or in other words that all those properties could be operated more economically and advantageously both in the interest of the company and in the interest of the community served thereby than they could be operated separately. I am of opinion also that the service, both as to the quality of the water supplied and in the general administration of the business is improved and the better advantage of the community served.

Q. This cast upon the company rather an extra-ordinary amount of expense during the period of readjustment of the plants did it not?

A. I do not consider it extra-ordinary—I should say decidedly no.

Q. Do you mean to say that the expense of additions and repairs would be at the same rate during ordinary years, or during a year or more after the consolidation, after you were readjusting the plant?

A. Not at all. I measure the degree of expenditures as indicated by the term extraordinary as to whether or not with the results obtained, it contributed to economy and efficiency of operation.

Q. Did you regard in making the purchase of the Lonsdale-Beaumont Water Company that it was susceptible of being operated as an independent plant advantageously?

A. You mean to inquire whether I considered that it could be operated advantageously as an independent plant?

Q. Yes sir.

A. I don't think I considered that as a factor in determining its purchase, or expediency of purchase by the Knoxville Water Company. My impression is that the showing made by the company at that time fairly well justified the price which the holders of
902 its securities put upon them, based upon its independent operation.

Q. That is that it was a fairly prosperous concern?

A. I think so.

Q. Now if that was true it was susceptible of operation at its then rates, and of successful operation was it not as an independent plant, and did not its books show that it had been operated successfully?

A. I had not seen its books. The value which was paid for its securities to which I have testified would be sustained by its earnings only in case that they afforded a basis for refunding them at the end of depreciation. That basis of valuation I had not inquired into.

Q. And you mean its operation as an independent plant prior to that time?

A. It would have to afford that. I had not that element in mind when I spoke of the valuation of its securities. In other words whatever there was of arrears of depreciation, or of fair but unrealized earnings, would be an additional element of value which its future rates must satisfy. That I did not take into account.

Q. Between October and November 1899 and March 1901 there was a very extensive readjustment of the three plants, looking to

economy in the management and efficiency of service was there not, and at a very considerable outlay by the company?

A. I think I have already testified that in my judgment there was not a very considerable outlay necessary or made as of that particular time.

Q. The figures you have exhibited here will show will they not?

A. I don't think the figures which I have put in here separate such extensions or expenditures as were necessitated solely by combining the two plants. I wouldn't be able personally to make that showing.

Q. I believe you state that it takes some little time after
903 the initiation of a plant for it to acquire the average or ordinary earning power of the plant, doesn't it?

A. Yes, or properly I should say to acquire an earning power sufficient to pay a fair return on the capital invested.

Q. About how long does it take?

A. Sometimes it is never attained.

Q. Ordinarily how long?

A. I don't think that question is capable of being answered in specific terms. Every case has to be considered upon its own merits, or every case has its own peculiar conditions, which are no guide in another case.

Q. Has not the business of the Knoxville Water Company steadily increased since 1895?

A. The net business has not.

Q. I am speaking of the business; hasn't your gross earnings been increased?

A. I am unable to say. The Treasurer will be able to tell you that.

Q. Has not the services?

—. The Superintendent or Treasurer will be able to give you that. I think that is generally true, but I wouldn't be able to say that that was invariable true.

Q. Now Mr. Wheeler the city of Knoxville lies on the Tennessee river and along side of it, does it not?

A. It does.

Q. The river running for a mile or more through the city or along side the city?

A. Along side the city.

Q. That river affords abundant water supply, don't it?

A. In quantity I think it does.

Q. It affords natural elevation for the reservoir doesn't it?

A. You now speak of the city and not the river?

Q. Yes I say the city affords natural elevation for the reservoir?

A. For such reservoir as we use—low service it does. It would not afford elevation for high service.

Q. How near to the river is that reservoir?

904 A. About a half mile.

Q. The elevation is sufficient to afford water to all portions of the old city, isn't it?

A. Under such head as our low service affords, but not under sufficient head for satisfactory fire service in all cases.

Q. You didn't contract with the city to furnish water for fire purposes did you?

A. The company did before it built its works.

Q. When?

A. In 1882, I think it was.

Q. But not a high pressure fire service?

A. No.

Q. I will ask you if this stipulation is not embodied in the contract made July 1st, 1882 between the city of Knoxville and the Knoxville Water Company, being the contract upon which and under which the plant of the Knoxville Water Company was constructed. I read: "And it is further mutually understood and agreed by and between said company and the city that Article "1," Section "1" of this agreement be amended so as to require that the system of water works herein provided for shall be built and constructed in accordance with the plans, specifications and drawings (made by Moses Lane with the single exception t' at is to say, instead of and in place of the stand pipe for fire purposes at the reservoir, as required and contemplated by the plans and specifications of Moses Lane, the said Company shall construct and establish at the reservoir a system of by-pass pipes, by means of which the water, in case of fire may be directed in the proper mains by the direct pressure of the engine of the works"?

A. That appears to be the case in this Exhibit which you show me.

Q. You nevertheless went forward and constructed a stand
905 pipe soon after your company had entered into the agreement of November 1893, with Wheeler and Parks owning the North Knoxville Water Company did you not?

A. We did. We found no prohibition against constructing such stand pipe. It was one of the rights and powers of the company to add to its works whatever might prudently and legitimately serve the interest of the company and its patrons.

Q. Now at the time you came into control of the company in 1891, water was furnished to the city for fire purposes by this system of by-pass pipes, was it not?

A. I know nothing to the contrary. I am not able to say from my own knowledge whether or not that is true.

Q. Well this system was taken out, was it not, or fell into disuse upon your establishing the stand pipe system?

A. Not so far as I know. I don't think any particular change in that regard was made.

Q. Then the stand pipe was in addition to that system, was it?

A. I am unable to give you the details about that. The filtration of the water and the necessity of increasing the pumping capacity and the supply of water to be used, necessitated the construction of a new force main of enlarged dimensions, and one that introduced the water into the reservoir through the filters instead of directly into the reservoir unfiltered as was previously the case. To that extent the usage of the company has changed as to the manner

in which it forces water from its pumping station into the reservoir. That change may or may not have changed the system of by-pass pipes to which you refer. I am not informed upon that fact. I will add however that the filtration of the water—and by inference I assume the changes that were made necessary to effect that
906 filtration—has been passed upon by the city in its ordinance of October, 1899.

Q. But this stand pipe was erected long before 1899 wasn't it?

A. It was. What I have said has no reference to the stand pipe. It has reference solely to filtration as affecting the possibility of forcing the water through by-pass valves for fire protection without being limited to the reservoir pressure.

Q. What time did you put that stand pipe and filter in?

A. I think in 1894 or 1895.

Q. I believe you stated that your reservoir prior to that time was so arranged that the water stood in one compartment of it for settling, and then was introduced into another for use?

A. I stated it was my inference that that was the intent in the designing and original construction of that reservoir.

Q. Well, going back to the situation and conditions under which your company furnished water to the city of Knoxville; the old city of Knoxville was a very compactly built city, was it not?

A. I think I have already testified that I am not familiar with the original lines of the city as of any time prior to 1890, nor am I sure as of the lines as of that time in general prior to the addition of what was formerly known as the Tenth Ward of the city. I think it is fair to say that the territory was less extensive than it is now.

Q. Well so far as it was built up at the time you first saw the city of Knoxville, wasn't it rather a compactly built town, the inhabited portion of it?

A. I suppose it was less compactly built than it is now.

Q. It lay up and down the river a mile or more and extended out from the river something like a mile, didn't it?

907 A. Well, you will have to establish that fact by another witness, as I am not familiar with its geography of those early dates.

Q. Well, the supply of water required for North Knoxville and for the territory occupied by the Lonsdale-Beaumont Company required a stand pipe, didn't it for each company?

A. Well, the Lonsdale-Beaumont territory did according to the terms of its contract. The North Knoxville territory did secure the full amount of hydrant rental according to the North Knoxville contract. North Knoxville was supplied without a stand pipe for a time.

Q. But not hydrant service?

A. The hydrant service was supplied, but not all of it under the contract requirements as to pressure.

Q. Well, all of it could not be supplied without a stand pipe in accordance with the contract could it?

A. That is true.

Q. Are there not portions of both North and West Knoxville that

are higher than any part of the city of Knoxville, unless it be Reservoir Hill?

A. Excepting Reservoir Hill, I think that is true. Reservoir Hill in Knoxville, Fort Saunders in West Knoxville and the highest point in North Knoxville are substantially upon the same level and consequently the necessities for fair and satisfactory hydrant pressure are substantially the same in each case, excepting however that high territory within the limits of Knoxville is more densely built up than it is in North or West Knoxville, and hence the normal requirement for high service are even greater in Knoxville than it is in either North or West Knoxville.

Q. Isn't there a natural flow by gravity to every part of Knoxville—I will ask you too from Reservoir Hill without any
908 high pressure?

A. A natural flow to the surface levels, yes, outside of Reservoir Hill.

Q. Well, is there not a natural flow that would supply the town with water, or any part of the town with water by gravity merely?

A. You mean flow from the reservoir in East Knoxville?

Q. Yes, sir.

A. I think such flow would afford water at the ground level of all parts of Knoxville except possibly a few houses close by the reservoir when the reservoir was full. When the reservoir was only partially full, I think some houses might be left unsupplied.

Q. Then the original plant as constructed was inadequate to supply the service and water to the inhabitants of old Knoxville as contracted for?

A. If you will define what you mean by "inadequate," I will endeavor to answer your question, but I do not intend to put my terms of adequacy, that is my knowledge of it, against your term of which I have no knowledge.

Q. Do you mean to say then that there are portions of old Knoxville that could not be supplied by the old plant from the reservoir by gravity merely?

A. For what purposes—domestic purposes?

Q. Well, for all purposes except high pressure fire service.

A. What do you mean by high pressure fire service—pressure from some other system than these works would have afforded under these conditions?

Q. Well, I have given you the question.

A. Well, you must give me a direct question; I am very stupid you must realize.

Q. I don't think you are stupid to any great degree?

A. I want to be perfectly fair with you General Pickle,
909 and if my previous answers don't fully answer your questions if you will be more specific, I will endeavor to make clear where they don't come up to the true spirit of your query.

Q. Then I will ask you if these provisions don't occur in the contract of June 30th, 1882, between the Knoxville Water company and the city of Knoxville. First "that it (meaning the water company) will erect and establish upon and on the land acquired by the

said city for that purpose, a system of water works, with reservoirs and all proper and necessary mains, pipes, machinery, buildings and other appurtenances incident, necessary and sufficient to supply said city with water, to be taken from the Tennessee river at the site purchased by the city for that purpose—for all purposes hereinafter stipulated, etc.," and Second, "said company will supply private consumers with water at a rate not to exceed 5 cents per one hundred gallons" and in a later part of the contract is contained the provision with reference to the stand pipe that I have already alluded to. I will ask you if those provisions are not in that contract?

Mr. CALDWELL: We admit that the contract has those things in it and is here as a part of the record.

Mr. PICKLE: If that is so, then I don't demand it.

Q. Well, passing from that I will ask you if both North Knoxville and West Knoxville were not much smaller cities than old Knoxville, and much more scattered or sparsely settled?

A. Smaller as to population, yes, and more sparsely settled.

Q. Is it not a fact that neither one of them contained more than one-tenth the population of old Knoxville?

A. At what time do you have in mind?

Q. Well, at any time.

A. That was substantially true as I understand it according to the census of 1890. What the conditions are now as to the census returns I am not informed.

910 Q. Mr. Wheeler, have you the census of 1890?

A. According to the memoranda which I have here, and which I think I took from the United States Census Bulletins relating to the census of 1890, the population of Knoxville was 22,535; of West Knoxville now the 10th Ward 2114, and North Knoxville, now the 11th ward 2297.

Q. How far was the water supply to West Knoxville conveyed from its source in order to reach that point when the plant was operated as an independent company?

A. It flowed down by gravity from springs that were two or three miles distant in air line, I think four miles more or less by pipe line.

Q. It was obtained from several springs, the water of which was lifted into a stand pipe I suppose?

A. The water of which was collected together and flowed to the Well from which it was lifted into the stand pine or mains directly.

Q. How far apart were those springs?

A. Well, I think those that were most remote from each other, were a half a mile, more or less. I am not quite clear about that.

Q. Was North Knoxville closer or further from its water supply, or any water supply than the old city of Knoxville?

A. Well, that depends upon what you refer to or have in mind, in regard to the source of North Knoxville. The source of North Knoxville was pipes adjacent to that territory, and the source of Knoxville proper was——

Q. Old Knoxville lies between the river and North Knoxville?

A. It does, and the water supplied to North Knoxville had to be conveyed across the city of old Knoxville.

Q. What was the distance that it had to be conveyed to reach North Knoxville from the river?

911 A. Well, by estimation I should think it was perhaps three fourths of a mile.

Q. Mr. Wheeler what revenue do you receive from the city for water furnished to the city, or did you receive during the year ending March 31st, 1901?

A. I am unable to tell you.

Q. Do you know how many hydrants there are in the old city?

A. I prefer that you get that testimony from the Treasurer.

Q. Have you this morning the amounts received by you as supervising engineer based upon the gross receipts of the Companies.

A. Based upon the gross amount of water bills I have; that is what it is based upon.

Q. Well I want the amounts that you actually received and which were paid to you by the Company under that contract?

A. Well sir I am prepared to give them to you to the best of my information.

Q. What are they?

A.—

For the quarter from Jan'y 1st 1896 to March 31st, 1896..	$148.65
For the fiscal year from Ap'l 1st, 1896 to March 31st, 1897.	611.31
From April 1, 1897 to March 31st, 1898.....	621.85
From April 1, 1898 to Mch. 31st, 1899.....	657.27
From April 1, 1899 to March 31, 1900—(This includes a part of the first year during which the Knoxville Water Company realized returns from the plant of the Lonsdale-Beaumont Water Company.....	755.76
From Ap'l 1, 1900 to M'ch 31st, 1901 (which includes the bills due for water service supplied through the L-B	
912 Company)	931.29

These are 1% of the bills for water service. The actual collections are less to the extent of discounts for payments within stated dates, abatements, rebates, bad bills, etc., the amount of which diminution I am unable to give you.

Q. Were those amounts paid to you at these dates?

A. I acknowledge receipt of them, and I presume I received them.

Q. Did you give receipts for them?

A. My book-keeper did.

Q. The receipts are in the possession of the Treasurer then?

A. I think they are.

Q. Now you state those are based on water bills?

A. Yes sir.

Q. Well the company realizes considerable revenue outside of water bills?

A. I don't know of any.

Q. Don't it get something for putting in meters?

A. I have no knowledge of figures on those lines. This is what we consider our gross revenue, subject to deduction by discounts, abatements, rebates, and bad bills.

Q. But in the course of the operation of your business here do you not receive other amounts for meters and various other accounts that are not included in there?

A. There may be some receipts repaying the company for disbursements on account of installation of service or meters or for rents thereon, which are intended to support such investment, but such information will have to be obtained through the Treasurer.

Q. All that you base your compensation upon is the actual
913 receipts for water?

A. I have already stated upon the amount of bills rendered for water service.

Q. And you gave receipts for the amounts you received?

A. I think my bookkeeper did.

Q. How were they paid, by check?

A. They were usually paid by check, yes sir.

Q. From what source do you get that information?

A. From the treasurer.

Q. Mr. Elbert Wheeler?

A. Yes sir.

Q. He will be examined in this case will he?

A. I suppose he will.

Q. You have stated that at the same time and covering this period that you represented ten other water companies?

A. Ten more or less; I do not recall the exact number now.

Q. What water companies were those?

Mr. CALDWELL: We object to that inquiry directed to Mr. Wheeler's competency as an expert witness, as an inquiry intended to test that competency.

The point here is that Mr. Wheeler says that he draws as compensation a certain percentage on water bills from certain other water companies as well as this one. Now what relevancy there can be *be* in the names of those water companies, I am unable to say.

Mr. PICKLE: The witness has made the statement that in addition to serving this company he was serving ten others more or less. I want to show that he was receiving perhaps as much as $10,000 a year at that time from his business as supervising engineer.

COMMISSIONER: The exception is sustained.

914 Mr. PICKLE: We except to the action of the Commissioner and appeal to the Court.

Q. I will ask what amount of compensation you received in gross from all these companies during this period?

Mr. CALDWELL: I object to that.

COMMISSIONER: Exception sustained.

Mr. PICKLE: I enter a like exception as above.

Q. Mr. Wheeler have you the Treasurer's book of the old Knoxville Water Company here at this time?

A. I have not no sir.

Q. Is it in Knoxville?

A. I think such books as the Treasurer has ever had of the old Knoxville Water Company he has now in Knoxville.

Q. Now in the former part of your deposition you said you would have them brought here?

A. The Treasurer has had them sent here and he has them now in his charge.

Q. Will you kindly have them produced on the points suggested on an earlier part of this cross-examination?

A. The Treasurer will use those books. I have already stated I cannot give you the information pertaining to them as well as he.

Q. I desire to use them for the purposes of your cross-examination?

A. I would suggest that you take other means of getting that information through some other source than I, or I will say that I will do anything that counsel or the Commissioner think is proper or that should be complied with.

Mr. CALDWELL: Counsel for plaintiff understands that the Commissioner has already ruled that these books are open to the examination of counsel for the city upon such questions as are relevant and shall be designated before hand by counsel for the city pro-
915 vided the testimony upon such questions is controverted.

Q. Well passing from that for the present have you the stock book of the Knoxville Water Company that was called for in the former part of your cross-examination?

A. The Treasurer has the original Stock Certificate Book.

Q. Will you produce that for inspection?

A. Subject to the same requirements as in the case of the other books I will. I have no objection whatever so far as I am personally concerned to the Stock Certificate Book coming into the case, but as I have before stated I am personally unable to draw from it intelligent conclusions as to what it may show when properly interpreted.

Q. Well will you produce that book?

A. I will if it is proper. I am subject to direction about it. That book is not now and never has been in my custody.

Mr. CALDWELL: I would ask that counsel for the city specify for what purpose the book is required.

Mr. PICKLE: I have already stated that in the former part of this deposition.

Q. Will you produce that Stock Book Mr. Wheeler?

Mr. CALDWELL: My recollection of the matter is that those books were to be brought here upon request of counsel for the city and they are open to inspection according to the rule that the court has already laid down.

Mr. PICKLE: I am now asking for the Stock Book.

COMMISSIONER: As the book is in the city it might as well be brought in, but not for the purpose of turning over to counsel of

defendant to make a copy or exhibit of in this case. He may
916 ask such questions regarding the entries on the book, and the Commissioner will then pass upon the relevancy or irrelevancy of the same.

The further taking of this deposition was adjourned until Thursday morning, November 20th 1902, 9:30 A. M.

THURSDAY MORNING, *November 20th*, 1902—9:30 a.m.

The further taking of this deposition was adjourned until 2 o'clock P. M. Thudsday November 20, 1902.

917 The further taking of this deposition was resumed at the office of the Knoxville Water Company November 20th, 1902, at 2.00 p. m.

Q. Mr. Wheeler will you please produce the Stock Certificate and Treasurer's Books of the Knoxville Water Company relating to the period prior to 1891 for inspection by counsel for the defendant?

Mr. CALDWELL: Mr. Wheeler is not the custodian of those books, but we have no objection to his putting the Stock Book in now further than that we submit the question to the court. Mr. Wheeler stated in his deposition yesterday that he was unable to make any explanation of the Treasurer's Books, and had not considered them at all in giving his deposition; I would remark further that the general fact that the books do not correspond in particular details or items with Mr. Wheeler's analysis, may be taken for granted, for his analysis was made without reference to the books at all.

COMMISSIONER: Well if you have no objection to the Stock Book going in, let it go in then.

Mr. WHEELER: I have never examined the Stock Book, nor am I able to interpret it; it does not fall within my province to interpret it.

918 General PICKLE: I have a case here I desire to present to the Commissioner; it is the case of Worthine *v.* Continental Railway and Trust Company, and is an attachment for contempt of an officer of a corporation for refusing to produce books in a suit to which the corporation was not a party, and therefore it would apply more strongly to a case where it was a party.

COMMISSIONER: I don't think there is any controversy between us on that point. You ask any question that the Master thinks is relevant, and I will pass upon the question and the books can be examined as to any specific question if it is relevant, but to have the books introduced as Exhibits for examination on any subject, that's another question.

A. I have here a book which the Treasurer has just handed me, which he informs me is the original Stock Certificate Book of the Knoxville Water Company.

Mr. CALDWELL: Counsel for Plaintiff will not object to the introduction of the Stock Certificate Book, and are ready to obey the instructions of the Special Master in regard to the production of any books of the Company. It is in their opinion a proper proceeding

in the case to submit the books according to the ruling of the Master, but they insist that the account books and other books of the Company are in the custody of and are kept by the Treasurer,
919 and their interpretation requires expert knowledge of bookkeeping which the present witness Wm. Wheeler has repeatedly stated he does not possess. This fact in connection with the fact that the analysis of the plaintiff's property made by the present witness was made entirely without reference to or examination of the books, in the opinion of counsel makes it improper and unfair to this witness to require the books to be presented by him for general examination.

COMMISSIONER: Now what do you want to ask about the Stock Book?

Gen'l PICKLE: I want to examine it.

COMMISSIONER: That's where I don't agree with you.

Q. Does it appear from that Stock book how the certificates of stock were issued originally and since the organization of the corporation.

A. I suppose it does within certain limits; my understanding being that this is the original Stock Book. I understand the Treasurer is ready to answer any question as to the issue of stock as shown either by the Stock Certificate Book or any other books in his custody.

Q. I will ask you whether the book you have presented has in it the stubs from which the original stock was issued, and likewise the original shares pasted in after their redemption by the company?

A. I undersand for the most part it does; it seems to have.

920 Q. Now state from that book to whom and in what amounts and at what dates the original capital stock was issued?

A. Now I think it is proper for me to say in answer to that question, that I am unable to answer that question properly and wholly.

Q. Will you examine the book and answer it so far as you can from it?

A. That requires expert interpretation as I understand it, which unless instructed by the court, I do not understand falls within my province.

Q. Well will you testify so far as the book shows?

A. My answer has had sole reference to what the book shows and as to its interpretation.

Q. Well will you submit the book for examination?

A. Submit it to yourself you mean?

Q. Yes?

A. I have no objection to your taking the book and examining it.

Mr. CALDWELL: Plaintiff's counsel have no objection to witness taking the stock book—Stock Certificate Book—and reading the certificates and showing the number of shares issued.

(Here witness offered to take the book and read the certificates and shares from it.)

Gen'l PICKLE: Please let me finish my examination first.

COMMISSIONER: Mr. Pickle you had better ask him about the matters you want to, I think that would save time.

921 Q. Is it not true Mr. Wheeler that the first twenty certificates of fifty shares each were issued to F. M. Loweree, and those that are dated at all are dated as of November 2nd, 1882?

A. The first twenty certificates of fifty shares each are in the name of F. M. Loweree, the first four being without date, from No. 5 to #10 inclusive bearing date of November 1st, 1882, and from #11 to #20 bearing date of November 2nd, 1882.

Q. Does not said book likewise show that Certificate No. 21 for three hundred and thirty three shares was issued to F. M. Loweree, and that Certificate No. 22 for fifty shares was issued to F. M. Loweree?

A. That appears to be the case.

Q. Does it not appear from said book that Certificate No. 23 issued November 2nd, 1882, for three hundred and fifty shares was issued to Sewell Pierce & Sheldon in place of F. M. Loweree?

A. Certificate No. 23 for three hundred and fifty shares is in the name of Sewell Pierce and Sheldon, and the stub bears the inscription "Sewell Pierce and Sheldon" (interlined) "Ctf." No. 22 & 22) in place of F. M. Loweree."

Q. Certificate No. 24 purports to be issued to Sam McKinney in place of Nos. 21 and 22, does it not, for thirty three shares as of November 2nd, 1882.

A. I think you have got to the point where I cannot assist you, as I do not know what the significance of that stub is.

Q. Well please state to whom it is issued on its face, and what the stub shows?

A. Certificate No. 24 appears to be for thirty three shares
922 and bears the name of Sam McKinney, and is dated November 2nd, 1882; the stub is as follows: "No. 24 Nov. 2nd 1882 issued to Sam McKinney in place of Nos. 21 and 22 of F. M. Loweree" (with a pen drawn through the name) "for thirty three shares, received above described certificate, Sam McKinney."

Q. Does it not appear from said book that Certificate No. 40 issued 22nd November, 1882 to F. M. Loweree for two hundred shares, and that No. 41 was issued same date to same party for two hundred shares, and No. 42 was issued on same date to the same party for two hundred shares, and that No. 43 was issued on same date to same party for one hundred and seventy-five shares?

A. That appears to be the case, as I have followed you.

Q. Does it not appear from said book that Certificate No. 25 was issued November 13th, 1882 to C. E. Vail for thirty shares?

A. That appears to be the case.

Q. And that on the same date No. 26, Certificate, was issued to C. H. Wildes of New York for five shares?

A. Yes sir.

Q. And another for five shares to same party.

A. Yes sir.

Q. And another for five shares to same party?

A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
923 Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir.
Q. And another for five shares to same party?
A. Yes sir, the last certificate being No. 39.
Q. Does it now show Certificate No. 45 was issued November 22nd, 1882 to S. E. Cooke for twenty five shares?
A. It appears so.
Q. And No. 46 on the same date issued to S. G. Cooke for one hundred and seventy-five shares?
A. It appears to be.
Q. And No. 47 issued same date to S. E. Cooke for twenty-five shares?
A. It appears to be.
Q. Does it not show Certificate No. 75 was issued June 26th 1883, to John M. Brooks for one hundred and sixty-five shares?
A. That appears to be so.
Q. Does it not show Certificate No. 85 was issued February 25th 1884 to Mrs. S. G. Cooke for one hundred and sixty-five shares?
A. That appears to be so. I have assumed that when you say "issued" you mean either issued or transferred, as some of said Certificates appear to be transfers and are not original issues.
Q. All of those Certificates about which you have been testifying show on their face that they are full paid up and unassessable do they not?
A. The words "full paid and unassessable" appears in the face of each of those certificates and I so understand them to be.
Q. I will ask you to make a copy of those Certificates and make it an Exhibit to your deposition?
924 A. I here make one of these printed Certificates No. 500 Exhibit 8 to this deposition.
Q. Some days ago I asked you to put in your deposition a copy of

the Loweree contract under which the original works of the Knoxville Works were constructed, have you that copy yet?

A. I have here a book which was first shown me soon after I became interested in these works by Gen. Hood, at the same time that he gave me his brief in the case for a recovery of hydrant rental in the suit of the Knoxville Water Company against the Mayor and Aldermen of about 1887. This book contains copies of various charters, abstracts from Registry of Deeds, contracts between the Knoxville Water Company and the city of Knoxville and what appears to be a copy of contract between the Knoxville Water Company and Frank M. Loweree, which is found on pages 73 to 79, a copy of which I will have made and made a part of my deposition. (Exb. 9.)

Q. What time were the $125,000 of bonds put on this property and mentioned in this contract, issued?

A. I have no information as to the time of the issue of those bonds.

Q. Do the books of the company that you have in your possession show that Mr. Loweree was one of the charter members of the Knoxville Water Company?

A. I find the name of F. M. Loweree among those that are copied here in conection with the copy of the charter, being the first document copied in this book.

Q. Was he not one of the Directors of the Company likewise?

A. I do not know.

Q. Does the book you have in your hand show that fact?

A. I find his name also copied as one of the signers to a copy of what purports to be an amendment to the charter bearing date
925 25th July 1882. I find no records in the nature of Minutes of the Company showing who the Directors were.

Q. You have not the action of the Board of Directors or Stockholders authorizing this contract have you?

A. I have no recollection of seeing any vote of the Directors of the corporation. There are certain loose sheets which are in the possession of the Treasurer and they have the appearance of having been memoranda made with reference to meetings of the Directors or Stockholders. They are unsigned and some of them were dated to the best of my recollection. Whether they indicate action that actually took place or that was at some time contemplated, I am not quite certain.

Q. I will ask you who signed as President and Secretary the Certificates of Stock issued to F. M. Loweree?

A. John M. Brooks signed as Secretary and Sam McKinney signed as President; all of said Certificates so far as I now observe are signed by those gentlemen.

Q. Have you a copy of the contract for the construction of the Water Works in Knoxville made in 1879 between the city and McDonough and Company?

A. I find in this book to which I last referred a copy of a document entitled "City Water Works Knoxville, Tenn., 1879" and which is in the form of a contract between the Mayor and Aldermen of the

city of Knoxville, and W. B. McDonough and Company of Cincinnati. While it appears to be a copy it contains many interlineations and erasures, and portions of it being crossed out by drawing a pen across the lines or paragraphs, and is found on pages 25 to 64.

Q. This copy appears on the books of your company and
926 in the same book that you referred to as containing the contract with Loweree does it not?

A. It is in the book to which I have just referred as being handed me by Gen. Hood.

Q. Will you let the stenographer make a copy of it and make an Exhibit of it?

Mr. CALDWELL: We object to this because it is a document that was made three years before the Water Company was chartered and will make 40 pages in this record for no purpose whatever that I can see.

COMMISSIONER: That contract was made in 1879?

Mr. CALDWELL: It purports to be a copy of a paper dated in 1879, and it has no connection with this case whatever.

Mr. PICKLE: It is on the record book of the company.

Mr. CALDWELL: It is not a record book of the company, but an old book turned over to them by some body else.

COMMISSIONER: Was this Water Works built under this contract?

WITNESS: No sir.

COMMISSIONER: Why do you claim Gen. Pickle this has any reference to this case, to show the price the Water Works could have been built at?

Gen. PICKLE: I propose to show that McDonough and Company for the building of Water Works substantially the same as was built by Loweree agreed to do so for the sum of $64,000 as tending to show the value of these works.

927 Mr. CALDWELL: We object upon the additional ground that that paper is not authenticated in any way, and there is no proof that it is what it purports to be.

COMMISSIONER: The defendant may have the benefit of said contract for whatever it may be worth as evidence. It is contained from pages 25 to 64 in the book described by the witness in question and answer, but the stenographer need not copy the whole of the contract into the record. It is admitted in the record for whatever it may be considered worth as evidence.

Q. I will ask you Mr. Wheeler if you have not figured into your estimate of the cost original and additions of the Knoxville Water, plant, amounting according to your estimate to $711,000 and some cents, 20% for engineering risks and profits of contractors and interest on money during construction the following amounts as shown on the pages named in your examination in chief, amounting in the aggregate to $114,079.76, to-wit:

On page	25	$1,621.67
" "	26	176.74
" "	26	26.90
" "	27	373.12
" "	27	90.55
" "	28	42.20
" "	29	2,020.00
" "	29	250.50
" "	30	407.25
" "	31	507.00
" "	31	497.00

928

Page.

On page	32	5,500.00
" "	32	10,515.52
" "	34	12,834.93
" "	35	282.70
" "	36	5,378.54
" "	37	2,412.70
" "	39	66.95
" "	40	65.72
" "	41	1,451.52
" "	43	211.40
" "	44	457.61
" "	44	168.00
" "	45	2,250.98
" "	46	1,616.74
" "	47	437.15
" "	49	7,725.87
" "	50	76.80
" "	54	2,160.32
" "	55	724.83
" "	55	60.00
" "	57	5,045.36
" "	61	1,095.94
" "	62	451.35
" "	63	248.48
" "	64	798.00
" "	64	2,635.00
" "	64	59.02
" "	65	294.60
" "	66	826.16
" "	67	150.00
" "	67	74.35
" "	67	22.00
" "	68	174.40
" "	68	43.00
" "	69	673.21
" "	69	180.00
" "	70	

Mr. CALDWELL: Plaintiff desires to except to that question before it goes any further.

Gen. PICKLE: We can go through all of these items and pick them out, but we can't do it in the argument of the case.

COMMISSIONER: Go on with your question.

On	page	70	68.15
"	"	70	205.00

929

On	page	71	970.00
"	"	71	3.00
"	"	72	104.00
"	"	73	380.72
"	"	73	162.00
"	"	74	33.00
"	"	75	10.00
"	"	75	21.00
"	"	76	753.89
"	"	77	189.00
"	"	77	80.95
"	"	78	330.00
"	"	78	12.00
"	"	79	85.00
"	"	79	35.00
"	"	79	24.00
"	"	80	3,196.64
"	"	82	124.80
"	"	82	429.15
"	"	82	10.00
"	"	83	390.25
"	"	85	5,950.00
"	"	85	2,570.00
"	"	86	1,280.00
"	"	87	9,827.17
"	"	88	191.65
"	"	89	32.00
"	"	90	579.17
"	"	91	213.50
"	"	91	52.36
"	"	92	1,176.00
"	"	93	2,673.00
"	"	93	60.00
"	"	94	201.40
"	"	94	182.40
"	"	95	1,707.50
"	"	96	5,723.08
"	"	98	683.20
"	"	98	147.15
"	"	98	5.00
"	"	99	6.00

A. I will answer that now. I don't know.

Q. Will you examine the pages and amounts herein stated, and make the statement of whether or not the above amounts aggregate $114,079.76?

Mr. CALDWELL: Counsel for plaintiff excepts to the last question and the one preceding it, because the witness has stated at different points in his deposition the amounts included in his analysis, and counsel for defendant has gone through the record and copied
930 those amounts, thereby demonstrating that they are in the record, and it is putting useless work upon the witness to go over that work again. It can accomplish nothing in the record to require him to restate what according to counsel's own showing he has already stated. Plaintiff will insist that the proportionate part of this record made necessary by asking this question, be taxed up as costs against this defendant.

Gen'l PICKLE: These items are all based upon one claim, and we can handle them only in this record by getting some one to add them up; they are to be disposed of in some way, and we can't pick them up one by one and run through the record. All I ask of him is to add these up in a way that they can be handled by the Commissioner and counsel in disposing of this claim.

WITNESS: I desire to say in explanation of my answer that my testimony along that line of facts is very explicit, and cannot be misunderstood, and it is a mere problem in addition to select and add them up. If the Master says I should do it, I will do so, otherwise, it does not seem that I should be required to do all this amount of work for the other side; if, however, the Master deems it proper, I will do so.

Mr. CALDWELL: This witness has done his work in this matter once, and I do not think he should be required to duplicate
931 his work again in this case.

COMMISSIONER: I sustain your objection.

Gen'l PICKLE: I will state here that unless Mr. Wheeler chooses to correct the figures above stated and the aggregate of them, that counsel for defendant having made the additions will assume their correctness in the conduct of the case.

Mr. CALDWELL: Counsel for Plaintiff will ask the court to strike the question from the record.

The further taking of this deposition adjourned until Friday morning at 9:00 A. M. to meet at Knoxville Water Company's Office.

932 FRIDAY MORNING, *November 21st*—9:00 *o'clock a. m...*

The further cross examination of WM. WHEELER was continued at the water company's office.

Q. Mr. Wheeler can you tell what amount you received as Supervising Engineer on one per cent. of gross receipts for water bills for the year beginning March 31st, 1901, and ending March 31st, 1902?

A. I cannot at this moment.

Mr. CALDWELL: We except to the question as to inquiring into matters occurring after passage of the ordinance which is contested in this cause and insist that the inquiry must be limited to matters occurring prior to the passage of the ordinance of March 31, 1901.

COMMISSIONER: The Master over-rules this exception which he is aware is inconsistent with his former ruling on the same point, and yields to authorities.

Q. Mr. Wheeler will you obtain the amount and give it in this connection?

A. The Treasurer has referred to his books and furnishes me memorandum from which it appears that my compensation on the basis of percentage due for salary as Supervising Engineer for the year ending March 31st, 1902, is $1,028.48.

Q. Is it paid to you quarterly?

A. Paid quarterly usually.

Q. What have you received Mr. Wheeler for the quarters that have been paid since the last date mentioned there, March 31st, 1902?

933 A. For the Quarter ending June 30th 1902—$267.56. For the Quarter ending September 30th, 1902, $258.73. These amounts which I have stated covering the last year and a half are, as in the case of the amounts stated yesterday for the previous periods, one per cent. upon the gross water bills and not upon the net cash collections for water.

Q. Mr. Wheeler I notice that in the original contract between yourself, or Wheeler and Parks and the gentlemen from whom you purchased the controlling stock in the Knoxville Water Company, only $65,000 of the debenture bonds are mentioned. What became of the other $20,000; where were they?

A. I have no means of knowing.

Q. Were the other $20,000 ever put upon the market?

A. I think I shall have to refer you to the Treasurer for that information. I am free to answer that my understanding is that $85,000 were outstanding.

Q. You have no personal knowledge then about the other $20,000?

A. No nor nothing of the whereabouts of the $65,000 at that time. That statement to which you refer appeared in that contract and I had no subsequent knowledge of those certificates after that time.

Q. You have stated in the bill in this case, if not in your deposition that a portion of the revenues of the company were derived from water supplied outside the city limits. Is it not a fact that the plant inside the city limits is used for this purpose of supplying water outside the city limits; I mean its reservoir, engines, pumping station and its plant generally?

A. That is true to some extent.

934 Q. Well isn't all the water that you supplied outside of the city supplied through the instrumentality of your Works inside the city?

A. Yes sir.

Q. Mr. Wheeler at the time you purchased the Lonsdale-Beaumont Water plant, or prior to that time, was the territory supplied by the Knoxville Water Company and that company adjacent?

A. It was in a general sense.

Q. Were the two companies supplying water to customers in the same territory to any extent?

A. Not to any considerable extent so far as my information goes.

Q. They were to some extent, were they not?

A. I am unable to say as to that. Perhaps it would be a fair answer to that inquiry to say that so far as my knowledge goes upon the organization of the Lonsdale Beaumont Water Company and the construction of its works, the Knoxville Water Company immediately ceased making any extensions of its works in the territory occupied by that company.

Q. The territory occupied by the North Knoxville Works and by the Lonsdale-Beaumont Water Works, was desireable territory for the Knoxville Water Company into which it contemplated for some time extending its works. Are not those the facts?

Mr. CALDWELL: We object to that as irrelevant. My objection is that while any question that bears upon the subject of abandonment, or anything of that kind, is legitimate and proper, we do not concede the right of the defendant in this cause to attack in this
935 suit, as it appears to do in its answer, the consolidation of the two companies, or to raise or to take proof upon questions that may be raised in other suits. We consider the question as asking by indirection whether or not the Lonsdale-Beaumont Company and the Knoxville Water Company were competing companies, and insist that that is an issue that cannot be made in the pleadings, or made, the subject of proof in this cause.

Mr. PICKLE: My answer to that is, that it has been made in the pleadings and has been made a matter of special reference in this cause, and these gentlemen decline to have a trial of these questions settled in advance, and took no proof on that point.

COMMISSIONER: The exception is over-ruled. I don't see that it can do any harm yet.

A. Disregarding that part of the question which refers to the intentions of the Knoxville Water Company, which I do for the present, the desirability would depend upon the conditions or contracts under which such territory might be occupied or operated in by the Lonsdale-Beaumont Water Company or the Knoxville Water Company or any other owners of the works.

Q. That is the best answer you can give to the question, is it?

A. I think it is the best answer I can give you so far. I will say that as to the intent of the Knoxville Water Company, I should have to ref-r you to its transactions, as I am not authorized to interpret its intent otherwise than indicated by its acts.

936 Q. Mr. Wheeler it appears from the face of the stock certificates that were issued, and which were exhibited yesterday in a book that you presented for inspection, that the original capital

stock of the company was $200,000. It appears that about the time you came into the company that there were 2500 shares of stock, or $250,000 of capital. Do you know when and how the additional $50,000 of capital stock was issued, and what for?

A. As to how or when, I understand the Treasurer has analyzed the Stock Certificate book and will be able to tell you. As to the purpose, I am unable to tell you. I have a supposition about it, but merely a supposition.

Q. When did you first see the book containing the original or copy of the original contract between the City of Knoxville and the Knoxville Water Company, and other papers inquired about yesterday, which book you presented for inspection on your cross examination yesterday?

A. I think it was in the latter part of 1891 or 1892.

Q. During the period that you were negotiating the purchase?

A. It was after we had consummated the purchase.

Q. In whose custody was that book at that time?

A. My recollection is, as I think I stated, that that book was loaned to, or sent to Wheeler and Parks, or me, from General Hood; my recollection is that I then had typewritten copies made of parts of its contents, and returned it to General Hood. I have an impression of retaining possession of it until sometime in 1893, and that it was then returned to some local officer of the company in Knoxville. The book, to the best of my knowledge and belief, subsequently came to Wheeler and Parks' office, or to my office as successor to
937 Wheeler & Parks, with the Company's Record book after Mr. Sanford ceased to be secretary, and it was by me handed over to the Treasurer with other books which appeared to pertain to the Treasurer's office.

Q. Now what other books beside the Stock Certificate book and the book you exhibited on yesterday, were turned over to the Treasurer, pertaining to the business of the old Company?

A. I am unable to say specifically, or to identify any book; whatever books the Treasurer had, either came through my office, or came direct to him.

Q. Has your company a book showing the financial transactions of the old company during the construction period and during the period of its operation up to 1891?

A. I should have to refer you to the Treasurer as to what any of the books show in regard to the matter about which you inquire.

Q. Have you a book of that description?

A. I think I have answered that question.

Q. Do you not know that there is a book of that description in the possession of your company? and in this building where you are testifying at this time?

A. No, I don't know positively that it shows that.

Q. Will you get the book and ascertain?

A. What book do you refer to?

Q. The Treasurer's book?

A. Your question implies that I hav-n't answered you correctly.

I am perfectly willing to show you all the books that come within the scope of your inquiry. They are in that box there.

Q. Will you bring the books in and tell me their general
938 nature?

A. Unless instructed to do so, as I have repeatedly stated to counsel that I am unable to state what those books show, having never made any examination of them to determine what they show. And they are not, properly speaking, in my custody, and I offer a witness who is most competent of any one I know, to furnish the information, if it is available.

Q. I will ask you if you will examine the books and see if there is one of which I have spoken?

A. No sir, for I am unable to determine affirmatively.

Counsel for plaintiff excepts to any questions asked this witness as to the contents of books requiring expert knowledge of bookkeeping, on the ground that he is not the custodian of the books, is not the bookkeeper of the company, and has repeatedly said that he does not know the contents of the books of the company, and is unable to explain the same, and has shown that there is a witness who is the custodian of these books, and the bookkeeper of the company, who will be examined herein.

(The WITNESS:) I desire to add, as I have already repeated, that this company has not the slightest objection to the books coming into this case in the manner in which the Master has stated.

Q. You have access to those books, and they are here in the building?

A. I have pointed out the books to you; they are here in
939 the building and your eye now rests upon them.

Q. Well will you permit an inspection by counsel for *fe*defendant?

A. Subject to the advice of my counsel and the Master, I will.

Mr. CALDWELL: Counsel for plaintiff submits that the books shall be open for the inspection of counsel for defendant in answer to questions that are competent asked by counsel for the City.

Q. Counsel for defendant again asks you to look at those books and ascertain if there is not one there containing the transactions of the old company during the period of construction of its plant, and during the period of the operation of the plant prior to 1891, or if you will not do so yourself, will you permit the Master to do so, or counsel for defendant to do so?

A. The books are at the disposal of the Master.

Q. They are here in the room in a box are they not?

Mr. CALDWELL: It is respectfully insisted that counsel for defendant should allow the Master to act on those questions.

The COMMISSIONER: The Master rules that the Company has a right to elect the Treasurer rather than the President to show what the books contain.

Q. Then I will ask to recall General Wheeler, who is the Treasurer of the Company.

COMMISSIONER: The request is declined. The Master rules that General Wheeler shall be called by the Company as a witness
940 hereafter to testify as to the contents of the books, but not at this time.

Mr. PICKLE: Defendant's counsel not having opportunity to cross examine this witness from what may appear in the books on account of their non-production at this time, will reserve the right of further cross examination of the witness on this point after the books shall have been produced.

Mr. CALDWELL: As we are contesting that point at arms length, I want to have this made a part of the record: Counsel for plaintiff will not admit the right of counsel for defendant to say when he will continue the cross examination of the witness; the witness is now present upon the stand for the purpose of being examined, and plaintiff insists that he shall not be called for further cross examination except upon a showing according to the rules of practice prevailing in the courts, and not at the will of this defendant.

Q. Mr. Wheeler, I believe you have stated that you are the successor to the business, and as such the holder of the records, books, &c., of Wheeler & Parks?

A. I am.

Q. Have you the books of Wheeler & Parks relating to the construction of the North Knoxville plant, and if so, where are they?

A. I have them in Boston.

Q. I ask you to have them forwarded and produce them
941 for inspection and for the purposes of your cross examination in this case?

Mr. CALDWELL: We except to the competency of the books of Wheeler & Parks in this case.

COMMISSIONER: I think it is going too far to go outside to a Construction Company, for we would then have to hear what they bought at a fair valuation.

Mr. PICKLE: The defendant excepts to the action of the Commissioner in not requiring the production of the books of Wheeler & Parks which the witness has testified will show the actual prices paid for at least parts of the material used in the construction of the North Knoxville plant, and which has been put in, in the witness' examination in chief at an estimated, and as defendant insists, an exaggerated cost price; he especially insists that this should be done, as the Knoxville Water Company was controlled absolutely by Wheeler & Parks at the time of the making of the contract between that firm and the company, the said Wheeler & Parks voting in the stockholders' meeting that elected directors and provided the stock for said purchase more than 2400 of the 2500 shares of the Knoxville Water Company. Defendant's counsel gives notice now to the witness to produce the books.

942 Q. Mr. Wheeler, has the Knoxville Water Company a complete set of books showing its financial transactions in the way of additions, reconstruction of plant, and its receipts from

the period that you became the owner of a controlling interest in it down to the present time?

A. I understand that it has.

Q. Will you produce those books for inspection, and for the purposes of your cross examination?

Mr. CALDWELL: Counsel for plaintiff excepts to this question as already excepting repeatedly to questions substantially identical, the exceptions having been sustained, as counsel understands, by the Master, and the plaintiff respectfully submits that there should be an end to such questions, which can accomplish no purpose except to annoy the witness.

COMMISSIONER: Exception sustained as heretofore.

Mr. PICKLE: Counsel for defendant excepts to the action of the Master, and gives notice that he will ask to recall this witness for the purpose of cross examination upon the contents of these books when they shall have been produced.

Q. Mr. Wheeler, I am not an expert, and I do not know that you have stated in your deposition, or if you have I do not know that I have understood precisely what you mean by "Depreciation." Will you explain that term so that I may get it clearly in my mind?

943 A. My definition of depreciation, and of the effect of depreciation as bearing upon an issue of this sort, will be found on pages "11 and 12" of my deposition, and upon some of the subsequent pages. If you wish me to amplify in any respect, I shall be very glad to do so.

Q. Let me see if I understand; Depreciation represents that portion of the plant that passes out of the actual value of the plant, does it not?

A. Well "actual value" is a vague term to my mind. It is a term which I have not used, and the significance of which in your own mind I do not now understand. Primarily it (depreciation) represents, as I have tried to express it in several places, impairment which is not made good by current and annual expenses for repair, or which results from being outgrown in capacity for the current growing needs of the service, or by replacements resulting from necessary changes in the works required to meet changes in the service, or the conditions affecting the service or supply. It represents, with respect to physical value, portions of the plant, the capital cost of which has completed the service for which that capital was invested, and which capital therefore, having completed its service, the investor is entitled to have back. I might illustrate that by considering the significance of depreciation, and of the investment with reference to a municipal plant. Municipal plants of this general sort are not for, as a rule, out of issues of bonds made upon the credit of the municipality, which issue of bonds represents the whole investment, and which investment looks for redemption either to income from that plant, or to rates levied in the form of general taxes. Such capital has no source of redemption, but from rates afforded by the works, if it is a productive plant, or by taxes, if it

is a non-productive plant, and if the depreciation is not pro-
944 tected in this way, it results necessarily in the repudiation of the loans of the municipality. Loans may be refunded by a sinking fund, which as I have stated is an off-set to such an extent as such fund may be created and applied to repay that part of the capital which has served its intended use, or the limit of whose usefulness has been determined by necessary and unavoidable conditions. Suppose for instance, the City of Knoxville should make a loan for paving its streets and building bridges, payable in a certain time, bearing a certain rate of interest. If no sinking fund is created, and even if in the course of time the pavements are absolutely worn out, and come to have no physical value, nevertheless the obligation to levy rates to refund that capital investment, or to repay the securities upon which that capital was secured, still rests upon the municipality, still rests upon the general tax-payers—the rates in that case being in the form of taxes. If it were a water works that had been paid for out of the proceeds of such a loan, then the obligation to provide funds to repay that loan in principal and interest, would rest upon the rates to be charged for the use of water to such extent as they were not afforded out of the general tax levy,—the fact being that municipal water works are sometimes supported by rates from water service, and sometimes in part out of the general tax levy. All capital that is legitimately invested, and which serves a proper and legitimate use, must be protected in interest and in principal, whether the plant suffers depreciation physically or not, else the necessary outcome is the confiscation of that capital. If the only means of protecting it as in the case of a private company, to wit: from its rates are impaired beyond
945 the extent necessary for that purpose, that results in a form of confiscation to the benefit of the water consumers. This of course would not imply, nor would I be understood as holding, that any capital which was invested injudiciously, or any portion of the plant which was unwisely designed, according to the light of the time when it had to be installed, is entitled to such protection out of rates, but it applies solely to capital which has been prudently and needfully invested according to the conditions existing as of the time when the investment became necessary.

Q. Then you hold in your estimates that this depreciation should be figured in as a part of the value of the plant upon which to base the reasonable rates of the company, is that a fact?

A. It is a part of the claim upon rates which still remains unsatisfied and in effect, as I understand your question, it may be continued either as capital investment, or it may be entitled to reimbursement as principal as soon as the rates may afford funds therefor. As I have stated elsewhere in my deposition, I think in a case like this where the income status of the company at the end of its present contract with the City is likely to undergo radical changes, that the investor is entitled to have this capital back out of earnings that may or should be afforded prior to that time;—that is to say, that part of the capital represented by depreciation so that the capital remaining invested as of that time should be commensu-

rate with only the unimpaired or remaining physical value of the plant as of that time.

Q. You have figured in depreciation as a part of the cost of the plant, have you not?

946 A. No sir, I have not.

Q. Well as a part of the value of the plant upon which rates are to be fixed, have you not?

A. I have figured the capital which remains invested in the plant as the basis upon which rates should be determined, whether the work represented by that capital has suffered depreciation or not.

Q. What amount of depreciation is shown by your estimates in this case, and goes into the estimates?

A. My estimate of the depreciation and the accrued arrears of interest thereon, comprising depreciation arising from discontinuance or replacement, and from the deterioration of the plant still remaining in use, is shown by table "H" inserted between pages "166 and 167" of the Record, amounting to $184,742.19. I have not added that to the capital investment. I have simply not taken it out, because the capital still remains in.

Q. How much of this amount of depreciation is on account of capital that has served its purpose fully and is entitled, as you say to a return?

A. Understanding you to mean by having "served its purpose" the capital represented by those parts of the plant which had been discontinued March 31st 1901, my answer is $95,987.04, shown in column "3" of that table.

Q. By your last answer you mean such parts of the plant as had been discontinued by reason of having become insufficient to supply the city as it then existed?

A. Insufficient in capacity, or by necessary changes in the method of supply, or other proper changes incident to any change of conditions.

Q. You don't mean that the property had served its ordi-

947 nary life?

A. To some extent that property had served its normal life, during its normal life.

Q. What property included in that had served its normal life?

A. Well a few pipes, but I considered that the boilers had served their normal life—four boilers—that the Davidson Pumping engines and appurtenances and connecting pipes had served their normal life, although that item is affected by the fact that the service had, to a large extent outgrown their capacity, and some others. I wouldn't undertake to state them.

Q. What is the ordinary life of a good pumping engine?

A. Oh it depends upon its kind, care and service.

Q. Suppose it is well taken care of and is a good engine to begin with, and rendered such service as is required by a plant of this character, what is its ordinary life?

A. There are variable periods. I have known many small pumps to be out-worn, or to have out-lived their usefulness in ten twelve

or fifteen years; I have known others, very high class engines, to serve two or three times that period. There is one consideration which determines the useful life of such machinery, which I have not mentioned, which is a most important one, and that is the gradual improvements made in such machinery whereby much greater efficiency is afforded, and whereby therefore the saving in operating expenses that would be afforded by installing such an improved engine would more that off-set the increased interest charge due to its installation. All the changes to which I have referred as I now recall, are changes made either in the interest of economy, or of better service. If such changes had not
948 been made as I think I have already stated, the charges to be made (according to my view of this case) against future rates, would be larger than I have assumed in this case.

Mr. PICKLE: We object to the witness arguing the case and expressing opinions that are not asked for by the question.

The WITNESS: I accept any precautionary suggestions of counsel.

Q. I will ask you whether this Davidson engine was worn out at the time it was removed?

A. Certain parts of it had been worn out from time to time. For instance the plungers had been worn out and new ones had been provided for it. It had arrived at such a condition of wear, that it was not economical to continue its use, even if its capacity had been sufficient.

Q. Now it is usual, is it not, to properly and wisely conduct water companies, to set apart annually a sum sufficient to meet this deterioration of the plant?

A. With reference to municipal works, that is usual so far as my experience goes, to the extent that the revenues afforded permit it. That setting apart of revenues however, is not usually called a depreciation fund, but as I have already indicated, it is in the nature of a sinking fund, which is in the nature of an off-set to depreciation whereby the capital is repaid. With a private water company my experience is that such a setting apart of funds is rarely possible except to such extent as the mortgage deed of trust under which the funds raised upon mortgage bonds requires the establishment
949 of a sinking fund for the reduction of the bonds, and to the extent to which such a fund has been afforded and created out of earnings, would represent an off-set to depreciation, or a provision for refunding the capital represented by any part of the works that had become impaired or replaced, so that the net investment would approximate the physical value of the plant remaining in use. And it is usual, so far as the earnings of the company afford the means for doing so.

Q. If the Company, from the amount of its capitalization and the amount raised by its bonds has received a sufficient fund for that purpose, it should be appropriated that way of course, shouldn't it?

A. I don't understand the significance of that question.

(Question repeated to the witness.)

A. I know of no source of funds that would repay capital except the proceeds of capital invested in the enterprise.

Q. Don't you think that the original capitalization, as well as the amount raised by bonds, should be honestly and faithfully appropriated to the uses of the company?

A. I do, according to the nature and amount thereof—the fair value thereof as of the time when invested. No excess of the original capital beyond the amount required for actual construction purposes would serve to refund anything more than itself.

Q. To illustrate your depreciation table, I will ask you if it does not appear on pages "31 and 32" that in the original construction of this plant in 1883 a reservoir on Reservoir Hill East Knoxville, was constructed at a cost of $33,000 including in that amount
950 20 per cent. for engineer's services &c.?

A. My estimate of the fair construction cost of such reservoir as I supposed then to have been constructed, does appear upon the page to which you *appear* and in the amounts which you state.

Q. Now this reservoir was abandoned subsequently was it?

A. No sir it is still in use.

Q. Well is it not in your table of depreciation?

A. I have made an estimate or an arbitrary allowance I think it proper to say, for depreciation on that item. That is a case in which the allowance is made in consideration not of physical impairment nor of present disuse.

Q. What is the amount of allowance you make for depreciation on this reservoir?

A. It is found on page "137" in my deposition $11,077.72, and the nature of that allowance is indicated on pages "136" and "137" of my deposition.

Q. Does your table intend to show that the reservoir at the date to wit; March 31st 1901, was worth that much less than the amount of the original construction price?

A. No sir not for uses as of that time.

Q. How much less was it worth?

A. I have no opinion on that; that is to say I have undertaken to form no opinion.

Q. Well it was worth some less wasn't it?

A. It is worth less only (as it seems to me now) to the extent that that capital will become useless sometime in the future by reason of changed conditions, and in that point of view it is worth less, because we have now so much shorter time in which to refund the capital invested in that reservoir out of earnings yet to accrue.
951 Q. It had been in use nine years of its life at that time?

A. It had been in use eighteen or nineteen years.

Q. About one-half of its estimated life?

A. About one-half of my assumed period of its probable use. I have known reservoirs of a much more substantial character to be used for a shorter period than that.

Q. Now you have figured the original cost of $33,000 into your estimate of the cost of this plant, hav-n't you?

A. I have.

Q. And you have figured an additional $11,077.72 into it as depreciation have you not?

A. No, not as I understand your question.

Q. Does not this $11,077.72 make up part of the $184,742.19?

A. It does.

Q. And isn't that sum of $184,742.19 figured into the original cost?

A. In addition to the original cost?

Q. No, as a part of the original estimate upon which you claim a fair return of the rates?

A. It is part of the $711,379.51 representing the original fair invested value of the physical plant or its construction cost.

Q. Then there is embraced in that $711,379.51 item for this reservoir $33,000 the estimate of the cost of its original construction, and $11,077.72?

A. No sir that is not true; there is only embraced in that the $33,000.

Q. In what?

A. The sum covered by your question, $711,379.51.

Q. Isn't this $184,742.19 embraced in the $711,379.51?

A. It is a part of it.

Q. Now isn't the $11,077.72 part of the $184,742.19?

952 A. Yes sir it is a part of that item $33,000.00 and is not in addition to that item of $33,000.00 for the reservoir. In other words Gen. Pickle these items of depreciation appearing in my deposition are not added to the construction cost. They are simply parts thereof that are separated—set apart as showing the relative part of the original investment which is entitled to reimbursement and refunding out of earnings.

Q. I know, but I repeat, hav-n't you figured the $33,000.00 original cost into the $711,379.51?

A. I have, but you asked in addition if I hadn't included $11,077.72.

Q. Well in the figures that go to make up your estimate of the cost of this plant there enters $33,000.00 as the original cost of the plant and $11,077.72 as depreciation that is to be provided for?

A. No sir. When you say "and" I understand "and" to be equivalent to "plus." When therefore you say $33,000.00 and $11,077.72 you mean in effect a total of *of* $44,077.72, and I say no.

Q. How much did you figure in?

A. $33,000.00 the original cost of the reservoir.

Q. Then you didn't figure in $11,077.72?

A. No sir except as it is a part of the $33,000.00.

Q. Will you state how much according to your statement is figured in for reservoir in your estimates—this reservoir—and point out the places?

A. You will find that on pages 31 and 32 of the record to which you have just referred under the head of paragraph "3. Reservoir on Reservoir Hill," the total amount being $33,000.00.

Q. Well how did you get this item of $11,077.72, how is

953 it made up Mr. Wheeler?

A. You will find the statement about that, and the state-

ment as to its significance, so far as I have made it and tried to explain it on pages 136 and 137 of this record. It is the amount that would have been afforded as of March 31st, 1901, by the contribution of 1¼% annually on the estimated cost of the reservoir, $33,000.00 beginning the first year after it was built and by the investment of those annual contributions at 4½%, in a fund which at the end of 35 years would have returned to the original investors the said $33,000.00.

Q. In order to get that fund you reach back to the date of the institution of this reservoir do you?

A. I have explained it as clearly as I can and assumed that a proper sinking fund to repay that capital in 35 years would be created by making contributions thereto each year from the first after it was completed onward.

Q. I see you place that at 4½% interest?

A. Yes sir as I have all such assumed contributions.

Q. What difference would it make in the amount if you would place it at 6% interest?

A. If the contributions to the fund were invested at 6% instead of at 4½%, each contribution as I now estimate it would be about 73% as great only.

Q. Per cent. is hard to deal with, but will you, state what would be the amount instead of $11,077.72 in figures?

A. Now if you will tell me just what you desire to know I will try to compute it, but I am not quite sure what you want.

Q. Suppose the interest was 6% instead of 4½% as applied to the calculation that raises this $11,077.72, what would be the
954 amount that would be substituted for that amount in case you used 6% instead of 4½%?

A. That depends whether you mean to adopt the same annual allowance at 1¼% of the investment -or the same period of life, 35 years.

Q. I say what is the per cent.?

A. I do not know whether you assume to change the period of life, 35 years or the annual percentage to be applied to the fund?

Q. The annual percentage applied to the fund is all I ask about?

A. Then the 35 years is changed. You will understand that if the fund is invested at 6%, it will wipe out or refund the original capital in a shorter period than if invested at 4½%.

Q. I am not asking about the period; let it cover the same period.

A. You are asking for a definite answer to an indefinite question. I will however assume that the annual contribution to the sinking fund remains the same, which if invested at 6%, reduces the length of the period when the accumulation of the fund would reimburse the original capital. I now find that I have not with me as I supposed I had, tables showing the accumulations of annuities or contributions to a sinking fund upon other bases of investment than 4½%, hence I cannot give you an answer as to such a fund on a six per cent. basis without first going through a very long calculation.

Q. The result would be more favorable to the defendants upon a

six per cent. basis than upon a 4½% either as to the number of years or the amount, would it not?

A. The use of a six per cent. investment rate would be either to diminish the annual amount to be contributed to such a fund,
955 or if the annual contribution remained the same, to reduce the period. How it would affect the sum corresponding to $11,077.72 as the amount of the fund accrued to March 31st, 1901, I am not prepared to say.

Q. Do you think a 4½ per cent. rate a reasonable one?

A. It is a higher rate than the trust companies having custody of the sinking funds of water companies with which I am connected, are able to secure upon investments that they are willing to approve of. That percentage does not relate to the fair return to investors, but to the return afforded by such securities as a prudent trustee would invest in for the creation of such a fund, or for the investment of trust funds.

Q. You think that or less a fair return upon investments that are absolutely good?

A. For what purpose?

Q. For any purpose?

A. Then you will have to indicate your purpose. What I have to pay for monies that I borrow and what I, as a trustee could obtain by way of a rate of interest on trust investments—upon securities in which I might safely invest trust funds are two very different things.

Q. Well now Mr. Wheeler passing to another matter, I see you figure $1000.00 with interest $60.00 as depreciation on the Lonsdale Beaumont Real estate. I don't understand the item and will ask you to explain it? This item will be found on the first sheet of your table or summary of depreciation of plant?

A. The details of that item you will find upon page $164" of my deposition under the head "Depreciation IX on Lonsdale Beaumont Works" being the first part of the matter referred to under that head, the effect of which is that the right-of-way and water
956 rights which were assumed ot have gone into the investment at $500.00 each, or amounting as of March 31st, 1900 to $1,000.00; the use of them were discontinued on March 31st, 1900, when that part of the investment had served its purpose to the end of its useful life. That capital remained in the plant, however, a year longer; that is to say, to March 31st, 1901, and not having been refunded to the investor or to the shareholders of the company or to the treasury of the company, it necessitated the continuance of the investment or of the securities representing the investment, or of the loans which the company was then carrying to that amount, and therefore, was entitled to and did carry interest during that year. So that the arrears on account of that property remaining unsatisfied out of the earnings up to March 31st, 1901, was $1,060.

Q. These rights of way that constitute the basis of this item are rights of way that were connected with the Lonsdale-Beaumont Water Company, and lying wholly outside of the city, were they not?

A. They were rights of way for certain parts of the works of the

Lonsdale-Beaumont Water Company, provided for under its contract with West Knoxville, and required and used for supplying West Knoxville under the ordinance contract.

Q. They lie wholly outside the city of Knoxville?

A. I am unable of my own knowledge to tell you whether that is the case or not.

Q. They were abandoned upon the consolidation of the companies, or soon thereafter?

A. Upon the consolidation of the works and the discontinuance of the sources of supply formerly used by the Lonsdale-Beaumont Water Company.

Q. And that abandonment was contemplated when the two
957 plants were consolidated, was it not?

A. It was the necessary outgrowth of plans contemplated when the two plants were consolidated.

Q. Your company still owns the right-of-way out there don't they?

A. I am not sure whether they do or not. I have doubt about that.

Q. This is a part of the item of $3600.00 at which you estimate the value of the Lonsdale Real estate in another part of your deposition, is it not?

A. Yes sir.

Q. All that real estate except $600.00 lies wholly without the City of Knoxville, doesn't it?

A. I would be unable to say about that; I don't know.

Q. On the last page of the schedule of "Depreciation" accrued to March 31st 1901 item "11, L. B. Real Estate, Improvements $35,-700.00" and carried into total depreciation column at $35,356.30, what constituted that item Mr. Wheeler?

A. The items making up the original invested value of $35,-700.00 are found on pages "84" and "85" of this deposition, under the head of "11-Improvements on Real Estate L. B." The depreciation on that item is referred to on pages "164" and "165" of this deposition, which depreciation comprises the whole of the item $35,-700.00 as there appears less salvage, consisting in the value of 3500 feet of 12" cast iron pipe taken up, $2345.00, leaving as the net depreciation due to the discontinuance of that portion of the plant as of March 31st 1900, $33,355.00. That sum however not being refunded out of earnings, remained in the investment during that following year to March 31st 1901, making the accumulated
958 deficiency or arrears thereon as of the last named date, $35,-355.00.

Q. Now all the property that makes up this item lies wholly without the city of Knoxville, does it not?

A. I am unable to tell you about that.

Q. Isn't it the property at the old pumping station of the Lonsdale-Beaumont Water Company?

A. At and between the old pumping station and the sources of supply—the springs that formerly supplied those works.

Q. It was not in use for supplying the city of Knoxville or its inhabitants since the 31st March, 1901?

A. That is true.

Q. Item 12 on the same page reads "L. B. Buildings and Machinery, $15,420.00," and carried into the depreciation column $14,914.20. Is it not true of this item that these buildings and this machinery were situated wholly outside of the city of Knoxville?

A. That is true if the Lonsdale-Beaumont Pumping Station was outside the city of Knoxville.

Q. And they were not in use to supply the city of Knoxville with water on the 31st of March, 1901, or at any time since that time, were they?

A. That is true. If "by not in use" you mean those particular physical parts of the property are not in use.

Q. That is what I mean. They had no relation to the business of the Knoxville Water Company until after the consolidation in 1899, did they?

A. They had relation to the business which the Knoxville Water Company then acquired.

Q. I am not asking about that. The Knoxville Water Company did not create these improvements, did it?

A. Originally you mean?

Q. Yes.

A. I think that goes without saying.

959 Q. And it was its purpose at the time it acquired the Lonsdale-Beaumont properties, to abandon them, was it not?

A. I think the purposes of the company will appear in its acts.

Q. In the estimate you have made of the cost and value of the Knoxville Water Company's properties for the purpose of fixing rates, you included the original Davidson engine put in in 1883 or about that time during the original construction of the works, with cartage, erection, etc., with 20% added, $13,200.00. This item enters into your estimates at that figure, does it not?

A. The investment which was required to install that plant enters into it.

Q. That engine served for seven or eight years and was replaced by a Worthington?

A. That engine served for eighteen or nineteen years and was replaced by the Worthington.

Q. When was the Worthington put in?

A. It was completed during the year ending March 31st, 1901.

Q. At what price was it put in; I mean at what price for the engine, the cartage and erection with 20% added?

A. Which engine do you now refer to?

Q. The Worthington?

A. You will find that on page 93 of this deposition.

The further taking of this deposition was adjourned until 2:00 P. M. Friday November 21st, 1902 at the Knoxville Water Company's office.

960 The further taking of this deposition resumed November 20th, at 2 P. M. at Knoxville Water Company's office.

(Continuation of cross-examination:)

Q. The cost of the Worthington engine, with cartage, &c. with 20 per cent. added, as shown on page "93" of your deposition, was $16,038.00, was it not, as estimated by you?

A. Yes sir, with its condenser, vacuum pump, jacket pump &c. connected with it, not including foundations, suction and discharge pipes.

Q. How long has this Worthington engine been in use?

A. Well since the year ending March 31st 1901; in other words, two years more or less.

Q. Now since the installation of your plant in 1884, it cost you for engine at pumping station $13,200.00 for the Davidson engine, cartage &c. with 20 per cent. added to $16,038.00 with like additions, has it not? making in all $29,238.00?

A. Yes, and something more including all the appurtenances connected with those machines.

Q. I just want to get in it these two items as far as I have gone?

A. I say this and more was my answer.

Q. Not more for these specific items is it?

A. Why those specific items could not be used without additional parts which are connected with them, and the cost of which is not included in the sums you have mentioned. Those are items of pumping machinery that had been installed but not a complete summation of the cost.

Q. Those other parts are charged for under their headings are they not?

A. Yes sir.

961 Q. I wish to ask simply as to the particular items enumerated. What is the estimated value now of the Worthington engine as it stands installed?

A. The figures stated in my analysis are my estimates of its investment value, which you have just stated, so far as they go. Those items express my estimate of its value.

Q. Are not these items the estimated cost?

A. They are my estimate of the fair installation cost.

Q. What I want is the present value of the engine after its use for the time you have had it?

A. I really don't understand what aspect of value you mean. In one point of view the value is greater to-day than when it was installed, because it would cost more money to replace it to-day than the amount charged here. In another aspect, looking to the refunding of the capital when they might become discontinued, and for which a sinking or depreciation fund would become necessary, in the absence of that fund they are worthless. If you wish to know what depreciation according to my assumption has accrued upon them, I can give you that.

Q. Well I will ask you is it worth more or less as a secondhand engine than as a first-hand engine?

A. Affected by that consideration alone, I would say of course

that a second-hand engine is worth less than a new one, other things being the same, but that consideration may be off-set and over-come by other considerations to which I have alluded.

Q. How much salvage did you get out of the Davidson engine. I speak now of the engine alone?

A. I think that is already in my deposition in two places, but I am perfectly willing to repeat it. You will find the items
962 on that matter on pages "134" and "135" of this deposition, from which it appears that the sal*av*-e on the engine is estimated as $1095.00, which as I have previously stated exceeds the actual salvage that was realized out of the same.

Q. Wasn't the sal*av*-e on the engine alone considerably less than the amount which you have above stated, there being other items included in that amount?

A. As I understand you, you are now calling for the amount of salvage on the item of two Davidson Single Compound Pumping engines entering into the statement of cost on page "28" of this deposition, and the two Davidson Direct Acting Air Pumps, condensers and fittings found on page "29" of this deposition, amounting to $13,200.00?

Q. Yes sir?

A. Now of the items which I referred to as yielding salvage of $1095.00 there were, as nearly as I can pick them out originally included in the said construction cost,

One Direct Acting Air pump.....	$100.00
and the old junk item of.....	500.00
Amounting to.....	$600.00

Q. Now looking to page "4" or "166-D" of your summary of depreciation of the plant, under the column marked "2" and designated as "Construction Cost of Plant" it appears, does it not, that the original cost of pipes and appurtenances put down in old Knoxville, North Knoxville and the Lonsdale Beaumont Addition is $367,858.23?

A. Yes sir, including all the outlying territory supplied from those several works.

Q. This pipe on the 31st of March 1901 had been in use, or different portions of it, as shown in said statement for various periods, ranging from seventeen years down, had they not?

A. I would say from eighteen years down.

963 Q. What was the value of this pipe on the 31st of March 1901 as compared with the original construction cost, as you have stated?

A. I will have to ask you the value of what kind? I have started out in my consideration of this subject with the statement that there are three aspects of value at least, and I need to have the same limitation fixed in a question as to the value raised by yourself as if I raised it myself.

Q. Well intrinsically, was it not very much deteriorated and of very much less value then when originally put in?

A. Dealing alone with the physical condition of the plant, it had suffered impairment or reduction by discontinuance aggregating according to my analysis and subject to my classification of $59,050.55, as shown in column "7" of the table in the same line in which you find the total sum to which you refer of $367,858.23.

Q. I am not asking about your method of getting the depreciation, but about the actual value of this pipe: Now take the item standing at the top of the column of $63,093.12, which represents the cost of pipe laid in the original construction in 1884, and had therefore been in use seventeen or eighteen years, what life or length of life had this pipe, and what was its actual value after its eighteen years use?

A. Actual value and value convey to my mind no distinction; all values are actual.

Q. Well you have not answered what is the life or length of life, or duration of this pipe, as you estimate it?

A. The life of various parts of this plant, as determined by its replacement, is stated in detail in this analysis, but I understand you to wish me to go through and pick them out again.

964 Q. No, I simply want you to state the life of this particular pipe that I am inquiring about?

A. As has been determined by its replacement, that's the life I have used in *de*riving at these sums that you have called my attention to.

Q. Well, I will ask you what is the ordinary life of such piping as you found put down in 1884?

A. I think I testified about that as fully yesterday as I am capable of doing. I testified yesterday in a general way, without any direct relation to this pipe, to the variations in the life and different conditions which affect the life of cast iron pipe, in general. If there is anything in addition to that you desire, I will endeavor to give it to you if you specify it so that I can understand you.

Q. Passing to the next item, which is $77,009.56, the cost construction of pipe that was put down between the original construction in 1884 and December 31st 1901. That pipe has been in use for nine or ten years, hadn't it?

A. Yes sir, various periods ranging from 17 years to 11 years. At this point, those two sums $63,009.12 and $77,-93.56 should be bracketed together as the depreciation in the columns to the right of that, are the depreciation allowances on those two items together; I have not been able to separate the depreciation in those two items. Now the details as to the item in that figure are set out in precisely the same manner as in the sum above it, subject to the same qualifications.

Q. Well it is true, is it not Mr. Wheeler that pipe that has been in use from eighteen years to various lesser periods, whether in the ground or out of it, is not worth as much intrinsically, as it was when it was put in?

965 A. It is not physically so valuable unless there has been a large advance in the cost of pipe, and the question of value

is to be determined by the cost of replacing it. In that case it might even be more valuable than its invested value.

Q. A plant const--utued of fresh and new material, would be far more valuable, would it not, than a plant possessed of the same material that has been in use for ten or twenty years?

A. Speaking alone of its physical condition, that is necessarily true. That bears upon taxable values.

Q. Since you have mentioned taxable values, I would like to ask you, do you think depreciations should be figured in taxable values?

A. No, it is to be figured *out* of taxable values; it is the physical impairment.

Q. The depreciation that you figure then is something that is not actually in the plant, but ought to be in it, is it not?

A. It is in the nature of an estimate of a depreciation fund that would be required to restore the capital which that portion of the cost of the construction or invested value represents.

Q. If it is actualy in the plant, then it ought to enter into the value of taxation, ought it?

A. That depreciation is not in the plant. That is to show what is gone out of the physical plant, but is yet to be satisfied financially; it has disappeared physically but remains to be satisfied financially.

Q. Mr. Wheeler, how many meters were put in during the year between March 31st 1901 and March 31st 1902?

A. That I don't know.

966 Q. Could you get the information?

A. Mr. Kimball could give you that information.

Q. Could you get the information and give it to me?

A. It seems to me that information, of that sort, ought to be treated just as information concerning financial conditions.

Q. Can you get the information from this office here?

A. I have no doubt the superintendent could give it to me, but it should be treated in the same manner as the Treasurer's books, that officer having that part of the business in charge.

Q. I do not want to examine the Superintendent now, and I don't know that I shall. Will you take the time to get the number of meters put in in 1901 and 1902?

Mr. CALDWELL: I don't see why Mr. Wheeler should be called upon to stop his deposition to go and get that information.

Mr. PICKLE: I think I have a right to call for information concerning so patent a question as that.

COMMISSIONER: I sustain the exception; I think the man in charge of the local plant is the best authority to get that information from.

Gen. PICKLE: Do we have to be driven to put him on?

COMMISSIONER: I understand he has not been put on yet, but that information will be given by them, I will see to that.

Q. Mr. Wheeler, upon your theory of estimating value, depreciation &c. would not the Water Company be insured against all losses, deterioration &c. to its plant, whether by fire, earth-quake or other causes by the levy of such water rates as would restore the

967 plant and leave the investment unimpaired?

A. I don't consider that to be the case. The water com-

pany considered itself to be limited by the contract ordinance of October 1899.

Q. I know, but is it not your insistence that you shall have a water rate that will yield not only a reasonable rent, but make it absolutely certain that you shall get that rent upon the whole value of your investment?

A. No sir, that is not my assumption. My assumption is that we are entitled to protection, not against earth-quakes or a general disaster, which would mean the wiping out of this plant in a day possibly, and which would require a depreciation allowance not of 2 per cent., but perhaps of 10 or 20 per cent.; I think we are entitled to such an allowance in rates as would protect us against the *ordinary* waste, impairment, &c. of the plant.

Q. Have you had any fire destroying any portion of your property since you have been in Knoxville?

A. I don't recall any; we carry insurance on our buildings; our boilers are insured, and are inspected by the insurers quarterly; most of our property is of such a nature that it does not burn very easily.

Q. Have you not realized anything on the insurance of your property?

A. I do not recall any instance in which anything has been realized on insurance.

Q. Have you sustained any losses?

A. I don't recall any instance of that sort in this case; I have not assumed there will be any loss from fire in this case.

Q. Well have there been any?

A. None that I know of.

Q. Now Mr. Wheeler if the public has to make good all
968 deteriorations of your plant, and all removals, whether they are made permanently or not, and before the life of the particular part has expired, and you are to levy rates that will make you whole in that respect, where does your company carry any risks of its own in that respect?

A. Well, you are putting a hypothetical question which I do not understand to be intended to represent this case. If the public gives us a guarantee which will be recognized as such, why then, I should not assume—if that guarantee is good and recognized as such—that we should have any risks, but I never knew of such a case as that. To illustrate in a natural way—in a way which invokes the consideration of things that do happen—besides my statement just now made that we considered ourselves limited by the rates established and agreed upon in the ordinance of 1899, we also considered ourselves limited prior to that ordinance by the rates that were previously established by the company. I have never known a water company to raise its rates, no matter what conditions ensued, and among the things against which we are not protected, would be for instance a panic, or loss of business, or the abrogation by the legislature of the charter of the City of Knoxville as it abrogated and cut off the Tenth ward which left us without hydrant rental. That sort of a thing we have no sort of protection against. If there should be conditions which would reduce the population and prosperity of Knox-

ville, that would operate against us. We have no protection against that sort of thing. I have not intended to assume that we are protected against our own blunders and palpable mistakes, but only in the investment of capital fairly and prudently invested, according to the conditions of the times then existing.

Q. What have you excepted out of the classifications and
969 estimates you have made attributable to your blunders and mistakes?

A. I have not referred to, or included anything of that sort as yet. There have been various expenditures which *I have not included;* for instance the company, before I became interested with it——

Gen. PICKLE: Speak simply of your own personal knowledge.

A. I am speaking from my personal knowledge—installed a pair of temporary pumps on the shore of the river to supplement the supply furnished by the Davidson pumps. They were in use the year I became interested in this property, and installed at substantial expense, and I think they were installed by lack of sufficient skill on the part of the employés of the company. We have made no account of the expense of that installation, nor the expense of operating it. That is one instance which occurs to me, and I might find others. Wheeler and Parks installed a filter plant in North Knoxville, which was called for under their contract with the town of North Knoxville; they anticipated only a brief period of use, but that was not a lack of judgment—it was actually necessary else they would have violated a provision in their contract; by reason of the very short term it was in use, we made no account of that.

Q. That filter plant does not go into this account does it?

A. No sir, but it contributed to building up the business from which this company derives its revenues, the magnitude of which goes to reduce or tends to reduce the rates to be charged.

Q. You voluntarily assumed the contract of putting it there, didn't you?

970 A. We did. It does not go into this account.

Q. It was transferred to the Knoxville Water Company was it?

A. No sir; Wheeler & Parks stood the loss. We purchased lands, both Wheeler & Parks and the Knoxville Water Company for the protection of their business in case we might possibly need them. While the company had protection in a measure from this, no charge has been made on that account. We have lowered and changed the grade of street mains, force mains and service pipes; laid blind service pipes; rebuilt boiler house; replaced chimney stack and installed temporary high service pumping machinery; we carry a large supply of stock on hands; there has been laid a mile or more of street mains, not included in my estimate. All of those things have been done, which however, I have excluded from consideration entirely.

Q. They were done by the regular force and employés of your company, were they not?

A. Most of them are things that have been done by the company.

Q. They have been paid for out of the treasury of the company hav-n't they?

A. So far as they were incurred by the company, they were paid for by the company, and they stand for that reason as a contribution to the safe-guarding of this company's service, for which no charge is presented here as a basis of claim against rates.

Q. But the company furnished the labor and paid for the material that contributed to that did it not?

A. Yes sir the company has assumed the burden; in other words, the burden does not lay against future rates.

Q. It came out of the revenue didn't it?

A. Certainly, but the treasury of the company is not
971 wholly fed by the revenues.

Q. Have the books been kept so as to separate those things?

A. I could not tell you about all of them. Some of these things that were not done by Wheeler & Parks were done by the company prior to our acquiring an interest in it.

Q. You stated that you carry a large supply of stock on hand. What do you refer to "the supply of stock"?

A. Well if you will look out that window, you will see a large supply of service pipe unlaid, and you will find a lot of meters, meter-boxes, stocp and waste-cocks, cast iron pipes, and special fittings, and in the pipe-yard of the company you will find other and heavier stock for street mains, hydrants, gates &c.

Q. Now hav-n't you been supplying customers here in Knoxville with pipe—selling it to them?

A. I don't know anything about that; not so far as I know.

Q. And hav-n't you derived a revenue from it?

A. Not to my knowledge. All of those facts will be freely shown you by the proper officer.

Q. Mr. Wheeler you have stated in former parts of your deposition that as successor of Wheeler & Parks you are in possession of the books of that company relating to the construction of the plant in North Knoxville, and that you are in possession of certain letters, correspondence, bills, receipts &c. showing to some extent at least the actual cost of material used in construction of the North Knoxville plant and that these books and papers are now in the City of Boston. I now ask you to bring those papers to Knoxville so that on our reconvening you may consult them and answer the questions
972 that I might ask you about the actual cost of the machinery, piping and other matters relating to the construction of the North Knoxville plant?

Mr CALDWELL: We except to that question.

COMMISSIONER: Yes, that is the same exception I ruled on before; I sustain the exception.

Gen. PICKLE: I will ask Mr. Wheeler when he returns to bring those papers with him.

The further taking of this deposition adjourned until December 8th 1902, at 9 o'clock A. M.

973 #89 STATE ST., BOSTON, *Oct. 30th,* 1903.

The meeting was called to order pursuant to the following notice:—

"BOSTON, MASS., *Oct. 26th,* 1893.

" Wm. H. Bowker, Esq., 43 Chatham St., Boston.

" DEAR SIR: There will be a meeting of the Directors of the " Knoxville Water Co. at Room 105, No. 89 State St., Boston, Mon- " day, Oct. 30th, at 1:30 P. M. to take action upon any matter " properly presented to the meeting.

" (Signed) JOHN F. J. MULHALL,
"Ass't Secretary."

There were present Messrs. L. H. Fuller, Wm. H. Bowker, Elbert Wheeler, Samuel Hanson and John F. J. Mulhall.

The matter of issuing additional stock, under the votes and by-laws adopted by the Stockholders, Sept. 6th, last for the purpose of raising funds for the extension and improvement of the works of the Company, was considered and discussed, and Mr. Bowker moved the adoption of the following votes, to-wit:—

Whereas, at a meeting of the Stockholders of the Knoxville Water Company, held at Knoxville, Tennessee, September 6, 1893, the capital stock of the corporation was authorized to be increased from time to time in the discretion of the Directors to $1,250,000. in shares of $100. each, of which 5000 shares, or any lesser portion, may at the discretion of the Directors, be made and issued
974 as preferred stock, and the remainder, including the 2500 shares outstanding, to be deemed and held to be common stock; each of which, respectively, shall be entitled to the benefit and subject to the limitations set forth in the votes and by-laws then adopted relating, thereto, and to be subscribed for, issued and applied in accordance with said votes and by-laws:

It is hereby Ordered and Voted:

That the Treasurer be and he is hereby authorized to receive subscriptions for and to issue additional stock at par, to the amount of Five Thousand shares of which Twenty-Five Hundred shares shall be Preferred and Twenty-Five Hundred shares common stock; and

Voted: That stockholders of this date be and they are hereby entitled to subscribe for the new stock to be issued, in proportion to their holdings of stock now outstanding, as follows, to-wit: For every share of stock now outstanding the holder or holders thereof shall be entitled to subscribe for one share of Preferred stock and one share of common stock, in addition to their present holdings; and for all new stock hereby authorized to be issued not subscribed for on or before Nov. 8th next, the Treasurer is authorized to receive subscriptions for the same by other parties, giving preference to present stockholders; the proceeds of the sale of the foregoing stock to be applied to "the liquidation of debenture bonds and out- " standing obligations incurred, extensions, improvements and bet- " terments of the works and property of the corporation." Adopted.

975 OFFICE OF KNOXVILLE WATER COMPANY,
KNOXVILLE, TENN., *Sept. 6th*, 1893.

Adjourned Stockholder's Meeting.

The meeting was called to order at 11:00 o'clock A. M. Sept. 6th, 1893, at the office of the Company, pursuant to adjournment, by the President of the Company, L. H. Fuller who presided as Chairman of the meeting, the Secretary of the Company, Edward T. Sanford, acting as the Secretary of the meeting.

The minutes of the meeting of Sept. 1st, 1893, of which this meeting is an adjournment were read and approved.

Upon motion the Chairman appointed W. H. Hague and J. A. Adams a committee to report as to the stock present or represented at the meeting. The said committee reported the following stockholders as present at the meeting in person, or represented by proxy, to-wit:

Present in person:	*No. of shares.*
Lucius H. Fuller	1 share.
Wheeler & Parks	2417 shares.
Wm. Wheeler	1 share.

Represented by Proxy:

Wm. H. Bowker	1 share	by W. H. Hague,	Proxy.
John H. Chapman	1 "	" F. C. Kimball,	"
Samuel Hanson	1 "	" J. A. Adams,	"
John Mulhall	1 "	" Wm. Wheeler,	"
Chas. F. Parks	1 "	" Wm. Wheeler,	"
Elbert Wheeler	1 "	" Wm. Wheeler,	"

Total stock present or represented ..... 2435 shares.

976 The Committee having reported, showing a majority of the stock of the Company present or represented, the Chairman thereupon declared the meeting open for business.

Article I of the call being under consideration, the following preamble and votes were, on motion of Mr. Wm. Wheeler, seconded by Mr. W. H. Hague, unanimously adopted, the entire stock represented at the meeting either in person or by proxy, voting for the same:

Whereas, to meet the growing needs of Knoxville and vicinity, it is becoming necessary in a constantly increasing degree to increase the pumping capacity, and to extend and improve the distribution system of the works of the Knoxville Water Company, and to generally improve the service rendered thereby; and

Whereas, the said Company has proposed and made repeated attempts to negotiate with both the present and the last preceding Boards of Mayor and Aldermen of said City for the amendment of the original contract between said City and this Company, whereby the mortgage debt limit fixed in said contract might be so extended

as to enable said Company to issue additional mortgage bonds, and thereby raise the funds with which to make the necessary improvements provided for in such proposed amendatory contracts, all of which efforts were made ineffectual by reasons of the veto, by the respective Mayors, of ordinances passed by the two successive City Councils for that purpose; and

Whereas, this Company has again, by its Supervising Engineer and Attorney during the past four or five months, tendered to, and placed at the disposal of, the Board of Mayor and Alderman
977 of said City, by its Committee on Water, successively two more alternative drafts or proposals for ordinances, designing to provide for the general enlargement and improvement of the water supply and service of the City and its inhabitants, and the increase of *of* the mortgage debt limit of the Company for that purpose, without action thereon by said Board or Committee; and

Whereas, in consequence of the aforesaid refusals and inaction of said City, it has become necessary in order to provide such improved water service to meet the imminent needs of the City and its inhabitants, and to enable this Company to carry out its obligation to supply the same, that it shall devise other means to secure the funds therefor;

Now therefore, it is hereby ordered and *voted:*

First. That the capital stock of the Knoxville Water Company be not less than $250,000. (the amount thereof now authorized, issued and outstanding) and that it may be increased from time to time in the discretion of the Directors to $1,250,000., divided into shares of the par value of One Hundred ($100.) Dollars each.

Second. That Five Thousand (5000) shares of the capital stock, or such smaller portion thereof as the Directors may in their discretion order, be made and issued as Preferred stock, the holders whereof shall, from and after October 1, 1893, be entitled to receive from the net earnings of the Company cumulative dividends of six per centum per annum, and to have such dividends with all arrearages, if any, paid in full before the payment of any dividend upon the common stock; and whenever the net earnings of the Company shall exceed the sum required to pay a dividend of six per
978 cent. upon the entire capital stock of the corporation issued and outstanding, the surplus shall be payable in dividends pro rata to the holders of the preferred and common stock.

Third. That the remainder of the capital stock, including the 2500 shares now outstanding, shall be, and is hereby deemed and held to be, Common Stock, the holders whereof shall be entitled to share pro rata in the surplus net earnings of the Company in excess of the sum required to pay a dividend of six per cent. on the preferred stock, with all arrearages thereof, from and after October 1, 1893, until such surplus net earnings exceed six per cent. upon the entire amount of the capital stock issued and outstanding; and whenever the net earnings shall exceed the sum required to pay a dividend of six per cent. upon both the preferred and common stock, such excess shall be payable in dividends pro rata to the holders of the preferred and common stock.

Fourth. That the Corporation reserves the right to redeem the whole or any portion of its preferred stock, from time to time, at its par value and accrued interest or dividends; provided, however, that three months' notice of its intention so to redeem any of its preferred shares shall be given to the holders thereof. Shares so redeemed may be paid for by the investment of surplus earnings therein, or by the sale of an equal amount of common stock the issue and substitution of which in lieu thereof is hereby authorized; or from the proceeds of the sale of mortgage or debenture bonds, or notes, of the Corporation, whenever such may be duly authorized.

979 In the event of the sale of the property and franchises of the Company, and the distribution of the proceeds thereof among the stockholders, the preferred stock then outstanding shall first be redeemed at par and accrued dividends, and no more, and the remainder of the proceeds of such sale shall be distributed pro rata among the holders of the common stock.

Fifth. That whenever any of the additional stock provided for hereunder is to be issued, the holders of shares at such time shall first be entitled to subscribe therefor, to an extent proportionate to their holdings, and for any shares not thus subscribed for by them the directors may receive subscriptions from any other persons, giving preference to such as shall be stock-holders; and the directors are charged with the further execution and administering of the issuance of additional stock, subject to the laws of the State, and to the charter and By-Laws of the corporation, and also with the collection and application of the proceeds thereof; and any such stock not subscribed for may be issued or paid for the liquidation of debenture bonds and outstanding obligations incurred or to be incurred, for additions to and extensions, improvements and betterments of the works and property of the corporation, and the proceeds of any of the additional stock herein authorized, either from sale or subscription, either preferred or common, shall be applied only to such purposes.

Articles 2 and 3 of the Call were also taken up, and on motion of Mr. F. C. Kimball, seconded by Mr. Wm. Wheeler it was, by all the stock present

Voted. That two committe-men be appointed by the Chair
980 to constitute with the Chairman of the meeting a committee of three to prepare and report a code of By-Laws of the corporation, for the consideration of this meeting not overlooking any limitations or provisions of the charter, nor any previous proceedings of the corporation (so far as shown by the available records thereof) that may affect the same.

Messrs. Wm. Wheeler and J. A. Adams were appointed to constitute said committee with the President, L. H. Fuller.

Mr. W. H. Hague moved that the said committee on By-Laws be instructed to incorporate into the Code to be reported by them the substance of the votes already passed and adopted by this meeting concerning the capital stock of the corporation, and that the forms of the certificates of shares be included therewith.

The motion was adopted.

Mr. W. H. Hague also moved that the same committee be instructed to consider what action, if any, should be taken by the corporation for the amendment of its charter, so as to incorporate therein the essential results of the action of the corporation at this meeting, concerning its capital stock; and to report thereon at this meeting. The motion was adopted.

On motion of Mr. Wm. Wheeler, a recess was ordered until one o'clock P. M. to await the action and report of the foregoing committee on By-Laws.

On the reassembling of the share holders at one o'clock P. M. the committee on by-laws reported as follows:

KNOXVILLE, TENN., *Sept. 6th*, 1893.

Stockholders of the Knoxville Water Company:

We beg leave to report that we have examined all the records of the transactions of the corporation and its directors, available
981 or known to us, to wit: A blank book of 257 pages containing *copies* of the charter of the company of the amendment thereto dated July 25, 1882, and also of sundry Contracts, Specifications, Deeds, Trust Mortgages, etc., together with sundry loose original records of directors' and stock holders' meetings occurring in 1882 to 1885 inclusive; also a record book inscribed on the flyleaf "Knoxville Water Co. Record Book No. 2, April 10, 1890," containing certified records of the directors of the company from April 10, 1890 to Aug. 30, 1893. In none of these records do we find that any By-Laws have been adopted, or are referred to therein.

In view of these facts, therefore, and of the further facts stated below, we conclude that no By-Laws have up to the present time ever existed or been adopted.

At a meeting of the directors held Apr. 10, 1890, a committee was appointed to prepare By-Laws, but there is no record that they ever reported. Again, at a meeting of the Directors held April 13, 1893, the Treasurer (Elbert Wheeler) and the Supervising Engineers (William Wheeler and Charles F. Parks) were made a committee to consider and report a Code of By-Laws for the Corporation. We find that they had already prepared a draft therefor, and a copy of the same has been furnished to this Committee. This draft meeting with our approval, we have added thereto Sections concerning the capital stock in accordance with your instructions, and do now respectfully submit the same herewith for your consideration and action.

Knoxville Water Company.

By-Laws.

Article I.

The Annual Meeting of the corporation shall be held at
982 its office in Knoxville, Tenn., on the First Wednesday in February in each and every year, at such hour as the Secre-

tary may determine. The time and place of all other meetings of the corporation shall be fixed by the Directors, who may order special meetings whenever they deem it expedient; and it shall be their duty to order a special meeting whenever requested thereto in writing by stock-holders representing One Tenth or more of the capital stock. In case the Directors neglect, or refuse, to order a special meeting, when so requested by the stock-holders, it shall be ordered by the Secretary.

Article II.

All meetings of the corporation shall be called by a notification specifying the time, place and objects of the meeting, signed by the President or Secretary, and published six times in one or moer newspapers published in Knoxville, Tenn.; the first publication to be at least fourteen days before the day of the meeting; or by mailing said notice to each stock-holder at his last known address as shown by the books of the company, at least twelve days before the day of the meeting.

Article III.

No business shall be transacted at any meeting of the corporation, except to organize and adjourn to some future day, unless there be present stock-holders representing in person or by proxy not less than One Third of the stock outstanding. No business shall be transacted at any meeting but such as relates to the objects specified in the call.

Article IV.

Immediately upon the adjournment of the Annual meeting of the stockholders, or any meeting held in lieu thereof, and at the place thereof, the Directors may meet for the election of officers, and for the transaction of other business, and no further notice of such meeting shall be required. Other meetings of the Directors may be called by the President whenever he may deem expedient, and shall be called either by him or the Secretary, at the written request of two Directors. Notice of such meetings shall be addressed to each Director, and deposited in the Post Office at least five days before the day of said meeting; provided, however, that meetings may be held when all Directors are present and waive notice thereof.

983

Article V.

The term of office of all elective officers of the corporation shall be until its next annual meeting, "but those in office shall hold until the election, or appointment and qualification of their successors."

Article VI.

Each stock holder shall be entitled to one vote for each share of stock standing in his name. He may be represented at any meeting of the corporation by proxy, whose authority must be in writing, executed by him, or his agent, not more than thirty days before the day of such meeting and produced at the meeting and filed by the Secretary.

Article VII.

It shall be the duty of the Treasurer to prepare and furnish to the Secretary at the meeting an attested list of the stock holders of record with the number of shares held by each as shown by the books of the company five days before the day of the meeting,
984 which shall be conclusive evidence of the number of votes each person voting is entitled to cast.

Article III.

The elective officers of the corporation shall consist of a Board of seven Directors, a President, Vice President, Treasurer, Secretary and assistant Secretary. Each member of the Board of Directors must be a stock holder in the company, and whenever a Director shall cease to be a stock holder his office shall thereby become vacant.

Article IX.

The Directors shall be chosen annually by the stock-holders, but shall hold their offices until others are chosen in their stead. Whenever any vacancy shall occur in the Board, it may be filled by the remaining Directors, or, if they so elect they may call a special meeting of the stock holders to fill same.

Article X.

All the powers of the corporation, except as otherwise provided by law or these by-laws, are vested in the Directors.

Article XI.

The President shall hereafter be elected by each new Board of Directors from among their number, and shall hold office until another is elected in his stead. He shall be President of the Board of Directors and of the corporation, and shall perform the duties and exercise the powers usually incident to that office.

Article XII.

The Vice President shall be chosen annually by the Directors, and shall discharge the duties and exercise the powers of the President during his absence or inability.

985 Article XIII.

The Secretary shall be elected annually by the Directors, and shall be the Secretary of the Directors as well as of the corporation.
The Assistant Secretary shall be elected in like manner, and shall perform the usual duties of the Secretary in his absence.

Article XIV.

The Treasurer shall be elected annually by the Directors and shall perform the duties and exercise the powers usually incident to that office. He shall give bond for the faithful performance of his duties,

in such amount and with such security as the Directors may require. He shall keep in proper books an account of all monies passing through his hands, and shall settle his accounts and report to the stockholders thereon annually, and to the Directors whenever they may require.

Article XV.

The Seal of the corporation shall bear the words "Knoxville Water Co., Knoxville, Tenn. Incorporated Jan'y 1882," and shall be kept by the Treasurer.

Article XVI.

1. The Capital stock of the corporation shall be not less than $250,000, the amount issued and outstanding September First, 1893, and may be increased from time to time in the discretion of the Directors to $1,250,000 divided into shares of the par value of One Hundred Dollars ($100.) each.

2. Five Thousand (5000) shares of the capital stock, or any lesser portion thereof, may at the discretion of the Directors be made and issued as Preferred Stock, the holders whereof shall, from
986 and after October 1, 1893, be entitled to receive from the net earnings of the company accumulative dividends of Six per centum per annum, and to have such dividends with all arrearages, if any, paid in full before the payment of any dividend upon the common stock; and whenever the net earnings of the company shall exceed the sum required to pay a dividend of six per cent. upon the entire capital stock of the corporation issued and outstanding, the surplus shall be payable in dividends pro rata to the holders of the preferred and common stock.

3. The remainder of the capital stock, including the 2500 shares outstanding September first, 1893, shall be, and is hereby deemed and held to be, Common stock, the holders whereof shall be entitled to share pro rata in the surplus net earnings of the company in excess of the sum required to pay a dividend of six per cent. on the Preferred stock, with all arrearages thereof, from and after October 1, 1893, until such surplus net earnings exceed six per cent. upon the entire amount of the capital stock issued and outstanding; and whenever the net earnings of the company shall exceed the sum required to pay a dividend of six per cent. upon both the preferred and common stock, such excess shall be payable in dividends pro rata to the holders of the preferred and common stock.

4. The corporation reserves the right to redeem the whole or any portion of its preferred stock, from time to time, at its par value and accrued interest or dividends; provided, however, that three months' notice of its intention so to redeem any of its preferred shares shall be given to the holders thereof. Shares so redeemed may be paid for by the investment of surplus earnings therein, or by the sale of an equal amount of common stock, the issue and substitu-
987 tion of which in lieu thereof is hereby authorized; or from the proceeds of the sale of mortgage or debenture bonds, or notes, of the corporation, whenever such may be duly authorized.

In the event of the sale of the property and franchises of the com-

pany, and the distribution of the proceeds thereof among the stockholders, the preferred stock then outstanding shall first be redeemed at par, and accrued dividends, and no more; and the remainder of the proceeds of such sale shall be distributed pro rata among the holders of the common stock.

5. Whenever any additional stock is to be issued, the holders of shares at such time shall first be entitled to subscribe therefor, to an extent proportionate to their holdings, and for any shares not thus subscribed for by them the Directors may receive subscriptions from any other persons, giving preference to such as shall be stockholders; and the Directors are charged with the further execution and administering of the issuance of additional stock, subject to the laws of the State, and to the charter and by-laws of the corporation, and also with the collection and application of the proceeds thereof; and any such stock not subscribed for may be issued or paid for the liquidation of debenture bonds and outstanding obligations incurred or to be incurred, for additoons to and extensions, improvements and betterments of the works and property of the corporation, and the proceeds of any of the additional stock herein authorized either from sale or subscription, either preferred or Common, shall be applied only to such purposes.

988 Article XVII.

The forms of the certificates of stock in the corporation either for *m*ew shares to be hereafter issued, or for the ex-hange of certificates outstanding September 1st, 1893, and for the transfer thereof, shall be as follows, respectively, to wit:

(*Form for Preferred Stock.*)

Authorized Capital Stock $1,250,000.

Number.	Shares.
500 Shares Preferred.	7500 Shares Common.

Knoxville Water Company of Knoxville, Tennessee.

This is to certify that —— —— entitled to —— shares of one hundred dollars each of the *of the* Preferred Capital Stock of the Knoxville Water Company, transferable only on the books of said company in person or by attorney on the surrender of the certificate.

The holder of this Preferred stock shall, from and after October 1, 1893, be entitled to receive from the net earnings of the company cumulative dividends of six per centum per annum, and to have such dividends with all arrearages, if any, paid in full before the payment of any dividend on the common stock; and whenever the net earnings of the corporation shall exceed the sum required to pay a dividend of six per cent. on both the preferred and common stock outstanding the surplus shall be payable in dividend pro rata to the holders of preferred and common stock.

In Witness Whereof, said Company has caused this certificate to be signed and sealed by its President and Treasurer this — day of ——, A. D. 189–.

[SEAL.] —— ——, *President.*

—— ——, *Treasurer.*

989 (In Margin:) — Shares $100 each. Full Paid and Unassessable.

(*Form for Common Stock.*)

Authorized Capital Stock $1,250,000.

Number.	Shares.
5000 Shares Preferred.	7500 Shares Common.

Knoxville Water Company of Knoxville, Tennessee.

This is to certify that —— —— entitled to —— shares of One Hundred Dollars each of the Capital stock of the Knoxville Water Company transferable only on the books of said Water Company, in person or by attorney on the surrender of this certificate.

In Witness Whereof said company has caused this certificate to be signed and sealed by its President and Treasurer this — day of ——, A. D. 189–.

[SEAL.] —— ——, *President.*

—— ——, *Treasurer.*

(In Margin:) — shares $100 each. Full Paid and Unassessable.

(*Form for Transfer.*)

For value received — hereby sell, assign and transfer to —— —— shares of the stock named in this certificate and do hereby constitute and appoint —— ——, attorney, to transfer the same on the books of the within named Company with full power of substitution.

Dated —— —, ——.

—— ——.

Witness:

—— ——.

Article XVIII.

990 All transfers of shares shall be recorded by the Treasurer in books kept in his office. On the receipt of such transfers or assignments of the original certificate, a new certificate or certificates shall be issued to the person or persons who by virtue of such transfers or assignments shall become the proprietors of shares.

Article XIX.

These by-laws may be altered, amended or repealed at any meeting of the stockholders, due notice thereof being given in the call for such meeting.

Regarding the expediency of emending the charter so as to incorporate therein the action taken by the corporation at this meeting, concerning the capital stock, your Committee finds that among the general powers of the corporatiin are *the* follows: (Charter of Incorporation, II, 5) "To make regulations concerning the subscription "for and transfer of stock; fix upon the amount of capital to be "invested in the corporate business; the division of the same into "shares," etc.

While some of the early records of the company appear to have been lost or mislaid, it does appear that the amount of the capital stock originally issued was $200,000, and that subsequently an additional issue of $50,000 was duly authorized by the share holders making the amount now outstanding, $250,000, but no limit to the final or ultimate amount to which it might be increased appears ever to have been fixed.

Neither in issuing the original amount, nor increasing the same, does it appear to have been deemed essential that cognizance thereof should be taken by the amendment of the charter to conformity therewith; and that such action was unnecessary seems to us
991 to be intent of the charter. The general power to fix upon the amount of capital to be invested in the corporate business" was, by the express words of the charter, vested in the Corporation itself, and as the normal growth and development of the plant and business of the Company would necessarily require from time to time the increase of its capital to a commensurate extent, we are of opinion that the charter vests in the Corporation as well the right and power to *increase,* (or to *fix* from *time to time*) "the amount of capital to be invested in the corporate business," as to fix or designate the amount with which it should begin or enter upon its corporate business.

That such a continuing power has heretofore been held to vest in the Corporation, not only under the original charter, but under the amendment thereof dated July 25, 1882, is indicated in the final clause of said amendment, which provides (amendment to charter, XVII,) "that nothing herein contained shall be construed or under-"stood as in any way prohibiting or restraining said Corporation "from altering, enlarging, or adding to its capital stock already "subscribed."

The increase of the capital stock from $200,000. to $250,000. appears by the original records above mentioned to have been made under a vote of the stockholders passed Aug. 1, 1885, by which the Directors were authorized to issue and apply the additional amount so provided for. This was done with the co-operation of the late President, and counsel of the company, Gen. Hood, who was present at said meeting and participated therein.

In order, however, that every safeguard may be thrown
992 around the action of the Corporation, we recommended that the Directors be given full power and authority to further

amend the charter by the addition of a section defining the amount and limitations of the capital stock, conformably to the action already taken at this meeting; such authority to be exercised by them in case they deem it expedient to take such action.

Respectfully submitted,

(Signed) LUCIUS H. FULLER,
WM. WHEELER,
JAS. A. ADAMS,
Committee.

On motion of Mr. F. C. Kimball, seconded by Mr. W. H. Hague and by vote of the entire stock present and represented at the meeting, it was unanimously

Voted: 1st. That the report of the Committee on By-Laws be accepted, and entered upon the records of this meeting.

2nd. That the By-Laws submitted with the report of said Committee be and the same are hereby adopted, and

3rd. That the Directors of the Knoxville Water Company be and they are hereby, authorized and empowered to procure an amendment to the charter of the Corporation, incorporating therein the provisions this day made and established by the stockholders, fixing the amount and limitations of the capital stock of the Corporation, in case they deem it expedient or necessary that such amendment be made. Said By-Laws as reported, voted and adopted will be found spread upon this record book on the foregoing pages 11 to 18 inclusive.

On motion of Mr. Wm. Wheeler, seconded by Mr. J. A. Adams, it was unanimously

Voted: That any stockholder who is a "minor, married
993 "woman, or other person under disability, or any stock-
"holder not agreeing to the acceptance" of the votes and acts adopted and passed at this meeting, modifying the amount and limitations of the capital stock, may cease to be a stockholder; and the Treasurer is hereby authorized and "instructed to pay said withdraw-
"ing stockholders the par value of their stock, if it is worth so
"much; if not, then so much as may be its real value in the
"market," in accordance with Article XVI of the charter of the Corporation.

Article 4 of the call was then taken up, and on motion of Mr. W. H. Hague, seconded by Mr. F. C. Kimball, it was unanimously

Voted: That so much of the records of the Directors contained in Record Book No. 2, and covering proceedings at the meetings held from April 10, 1890, to this date, as pertains to the election of Directors to fill vacancies in said Board, or to increase the number thereof; the election or appointment of officers and employees; the adoption of rules and regulations, and the making of contracts for the extension of pipes in territory formerly comprising the Tenth Ward of the City of Knoxville, together with all further acts of the Directors therein contained, excepting such as relate to the salaries of President and Secretary, which have since been discontinued,—be and the same are hereby ratified and confirmed; it being pro-

vided, however, that all of said matters are to continue subject to the direction and discretion of said Board of Directors under the authority vested in them by the charter and the by-laws of this Company, as this day adopted.

994 Upon motion the meeting thereupon adjourned.

The interlineation of the words "of which this meeting is an adjournment" above line 11 of page 5, of the words "present or" above line 14 of page 5, of the word "proposed" above line 17 of p. 6, the erasure of the words "by the" in line 14 of p. 8, the interlineation of the sentence "At a meeting of the Directors held Apr. 10, 1890, a committee was appointed to prepare By-laws, but there is no record that they ever reported" between lines 30 and 31 of p. 10, the interlineation of the words "dividends" and "in dividends" above lines 36 and 38 of p. 14 respectively, and of the words "present and" above line 7 of p. 20 were made and done before the signing of these minutes.

EDWARD T. SANFORD, *Secretary.*

995 *Contract.*

Contract for the Construction of the Knoxville Water Works.

This memorandum of agreement made and entered into by and between the Knoxville Water Company of the first part and Frank Mr. Loweree, late of Red Bank, New Jersey, now of Knoxville, Tennessee, by profession a builder and contractor of water and gas works, of the second part:—

Witnesseth, whereas, on Jany. 4th, 1882, by charter from the State of Tennessee, approved by the Board of Mayor & Aldermen of the City of Knoxville, the Knoxville Water Company was constituted a body politic and corporate for the purpose and with the right to construct, erect, establish and operate a system of Water Works at and within the corporate limits of the City of Knoxville, Tennessee;

And whereas, By a written article of agreement made and entered into by and between the Knoxville Water Company and the Board of Mayor & Aldermen of the City of Knoxville, bearing date July 1st, 1882, the Knoxville Water Company undertook, contracted and promised to construct erect and establish the said system of water works, within the period of twelve months from Aug. 1st, 1882, in accordance and conformity with the plans, specifications, maps, schedules and drawings prepared for said city by one Moses Lane, Engineer, with certain alterations and deviations, stated and expressed in said Article of agreement.

And whereas, By a written article of Agreement, bearing
996 date, the Knoxville Water Company conveyed, transferred and assigned to George P. Sheldon and Wm. H. Bingham of the City and State of New York, all property, real, personal and mixed, and all rights, privileges, easements, contracts and *choses in action*, then owned and possessed or afterwards to be acquired by said Company in trust to secure the faithful payment by said Com-

pany of the principal and interest of $125,000 (par value) of the First Mortgage bonds of said Company, afterwards to be issued and sold and the proceeds thereof employed in the construction of said Water Works.

And whereas, on September 4, 1882, Frank M. Loweree made and submitted to the Knoxville Water Company a written proposal for the construction of the said system of water works in accordance with the contract of the Company with said City of Knoxville, in consideration of the issuance by said Company to the said F. M. Loweree of One Hundred and Twenty Five Thousand Dollars (par value) of the first mortgage bonds of said company, and Two Hundred Thousand Dollars of the capital stock of said Company, which said proposal was by a resolution of the Board of Directors of the Knoxville Water Company, passed at a meeting held on the day of the date of said proposal, received, accepted, and assented to,

Now Therefore, in view of the premises and for carrying the said contract between the said Company and the said F. M. Loweree into effect. for the considerations hereinafter expressed, the said Frank M. Loweree, as contractor aforesaid *undertakes, agrees and promises*:

A. I. The said Frank M. Loweree shall and will construct, erect, establish and complete, with all reasonable and practicable
997 expedition and dispatch and within the period of twelve months from Aug. 1st. 1882, as an ultimate limit, a system of water works at and within the corporate limits of the City of Knoxville, Tennessee, in every manner, and in all respects as good, ample, durable, capacious, substantial and efficient as required by and in strict and exact conformity and accordance with a written article of agreement, executed by and between the Knoxville Water Company and the Board of Mayor & Aldermen of the City of Knoxville, bearing date July 1st. 1882, which article of agreement, and the plan, maps, specifications, schedule, and drawings of Moses Lane, therein by reference incorporated, are hereby referred to and made a part of this agreement.

II. The pumping station, engine house, reservoir, and all valves, hydrants, mains, pipes and every portion of said works, shall be placed, located and established as contemplated and required by the said agreement between the Company and City and the said plan, maps, and drawings of Moses Lane, unless otherwise agreed upon by the Company and the City, and then, or where the agreement and the plans do not indicate at such points and at such places as the Company shall, by its Engineer, direct and designate.

III. The engines, engine house, reservoir, valves, mains, pipes, hydrants and every portion of the material apparatus and construction of said works, shall be equal in quality, dimensions, capacity, durability, and efficiency with and in every way as good; ample and substantial, as those contemplated and required by the agreement and the plans, schedules and specifications aforesaid.

IV. The contracts for furnishing and delivering the engines, valves, hydrants, mains, pipes, stone, brick, cement, iron,
998 lead, and all other material and apparatus for the construction of said works, for making all excavations, digging all

ditches, cutting all trenches, preparing all foundations, sites and embankments, laying all pipes, placing all engines, valves and hydrants; for constructing all masonry, stone-work, brick work, iron work and wood work and for every portion of the construction of said works, shall be made and entered into by the said Frank M. Loweree in his own name and on his own personal, private and individual credit and responsibility, and no promise, undertaking, agreement, contract or act of the said Frank M. Loweree shall constitute or impose any obligation liability, charge or debt upon the Knoxville Water Company or create as between it and any third person, any privity whatever.

V. The said Frank M. Loweree shall carefully and prudently observe and employ all precautions against the happening of accidents and the infliction of injuries, and in the event of the company being held liable for any injury to person or property on account of any act done or omitted in the construction of said works, the said Frank M. Loweree shall indemnify and save harmless the company; provided, the company may not submit — arbitration or compromise any such claim or suit without the written consent of the said Frank M. Loweree.

VI. A part of the consideration of the execution of this agreement by the Company is the skill and experience of the said Frank M. Loweree, and he shall give to each and every portion of the works of construction and the purchase of material and apparatus, his personal and vigilant supervision, direction, superintendance and control.

And in consideration of the premises, and the promises by the said Frank M. Loweree above expressed, the said *Knoxville*
999 *Water Company* on its part *promises, undertakes contracts and agrees:*

B. I. To issue, transfer and deliver to the said Frank M. Loweree, in the manner hereinafter expressed, *one Hundred and Twenty five Thousand Dollars* (*par value*) of the *First Mortgage Bonds* of the Company, secured as aforesaid, by the assignment in trust to George P. Sheldon, and William H. Bingham;

II. To issue, transfer and deliver to the said Frank M. Loweree, *Two Hundred Thousand Dollars* (*par value*) of the capital stock of the Knoxville Water Company in such number of shares as the Board of Directors of said Company shall, by resolution determine, each and every share of said two Hundred thousand Dollars of capital stock shall be paid up and *non-assessible stock,* so denominated on the face of each share, and so entered on the stock book of the Company, the construction and completion of said system of water works being received and accepted by said Company in full payment, complete satisfaction, entire release and free acquittal of all calls, assessments, subscriptions, dues or other claims, demands, or rights of action growing out of, attaching to or in any way connected with said stock or any share thereof, in favor of said company, its assigns and privies, against the said Frank M. Loweree his heirs, representatives and assigns; *Provided,* that said two hun-

dred thousand dollars of capital stock be delivered in the manner and for the purpose hereinafter stated;

And it is hereby mutually understood and agreed

C. I. The said Frank M. Loweree shall forthwith proceed to sell said *said said* One Hundred and Twenty Five Thousand Dollars of
first mortgage bonds and two hundred thousand dollars of
1000 capital stock to such person or persons as will purchase the same for cash in hand at such price as that the aggregate sum derived from such sale shall, in the judgment of said George P. Sheldon and William H. Bingham Trustees as aforesaid, suffice for the construction of the said system of Water works as aforesaid, when such sale is made at such price the purchaser or purchasers shall pay the price agreed upon by such purchaser or purchasers, and the said Frank M. Loweree and approved by the said trustees to said trustees who shall then deliver the said bonds and stocks to such purchaser — purchasers and by whom the proceeds arising from such sale shall be deposited in the Mechanics National Bank of Knoxville, on the account of and to the credit of the Knoxville Water Company subject to the joint draft or check of its President and Secretary, by whom the same shall, from time to time, as the work of construction progresses, be paid to the said Frank M. Loweree upon his requisition countersigned by the engineer of the company, which requisition and each and every one of them, shall in all cases contain a statement of the portion or amount and character or kind of the material, apparatus, or construction for which the same calls for, by the requisition was expended or is due, and in no case shall any such requisition be made, countersigned accepted or paid except for sums actually and properly expended for labor performed in and about the construction of said works, or for material or apparatus purchased and delivered therefor.

II. The Company shall not require any bond or any other like security from the said Frank M. Loweree, but the deposit of the proceeds of the *said* of said bonds and stock as aforesaid, is received and accepted instead thereof.

III. If at any time the construction of said works does not
1001 progress at such rate that, in the judgment of the Company's engineer suffices to complete the same within the period of twelve months from Aug. 1. 1882 the Company shall have the right upon giving five days notice to the said Frank M. Loweree and failure upon his part to expedite the construction, place such number of laborers upon the works, and procure to be furnished such material and apparatus as is requisite to expedite the construction to such rate as suffices to complete the same within the period of 12 months aforesaid.

IV. If, when the said system of Water Works is completed satisfactorily to said company and is accepted by it, there shall remain on deposit in the said Mechanics National Bank of Knoxville any balance or residue of the sum arising from the sale of said bonds and stocks, the same shall be paid to the said Frank M. Loweree on the joint check of the President and Secretary of the Company; and if, on the other hand, the sum arising from the sale of said bonds and

stock is exhausted before said works are completed, them shall the said Frank M. Loweree, without any other or further compensation from said Company, from his own personal and individual means, provide and furnish all sums necessary for completing said works in accordance with the agreement between the Company and the City, and in conformity with this agreement.

In testimony whereof the Knoxville Water Company, by a resolution of its Board of Directors, has caused this agreement to be signed on its behalf by Sam McKinney, its President and John M. Brooks, its Secretary, and has affixed its corporate seal; and the said Frank M. Loweree has hereunto set his hand. This September 4th 1882.

SAM McKINNEY, *Pres.*
JOHN M. BROOKS, *Sec.*
FRANK M. LOWEREE.

1002 *Deed.*

B. R. Strong & W. M. Epps
to
Knoxville Water Company.

This agreement made and entered into on this the 15th. day of September 1896 by and between B. R. Strong and W. M. Epps, both of Knoxville, Tennessee, parties of the first part, and the Knoxville Water Company, a body politic and corporate having its principal office and place of business in the City of Knoxville, Tennessee, party of the Second part;

Witnesseth, That Whereas the parties of the first part are owners of a certain lot or parcel of land lying, being and situated in the 1st. Ward of the City of Knoxville, and bounded by the Tennessee River and the said party of the Second part is also the owner of a certain lot or parcel of land lying, being, and situated in the 1st. ward of the City of Knoxville, bounded by the Tennessee River on the East and Southeast, and upon which is located the pumping station of the said party of the second part;

And whereas said properties are separated only by a supposed street known and called "Swan Street" which hosever has never been used in any way, or for any purpose, and both parties hereto agreeing to close said supposed street and the said parties of the first part agree to convey and quit claim to said party of the second part all their right, interest or demand in or to said "Swan Street," and every part thereof wherever said Swan Street shall lie between the properties of said parties of the First part — have agreed to give and grant to the said party of the second part a right of way over their aforesaid property so as to afford said party of the second part a reasonable convenient and practicable mode of ingress and
1003 egress to and from its pumping station up the river and over and across the aforesaid property of the parties of the first part to a point on East Front Street by a route which will do as little injury as possible to the said property of the parties of the

first part, and at the same time afford said party of the second part a convenient and practicable right of way to and from said pumping stayion as aforesaid.

Now therefore, in consideration of the premises and of the sum of One Dollar by each party paid to the other and upon other valuable consideration passing from said party of the second part to said parties of the first part at and before the execution of this agreement, the said parties of the first part do hereby bargain, sell, transfer, convey, release, and quit claim unto the said party of the second part, all of their right, claim, interest and demand in and to that part of Swan Street in the last ward of the City of Knoxville, from the Tennessee River to such point in such street and so far as the properties of both of said parties of the first part and the said party of the second part now touch and bound upon said street, and further said parties of the first part do hereby give, grant and convey unto the said party of the second part a right of way over their aforesaid properties to be located from pumping station of said party of second part over and across said properties of the party of the first part, and upon the river from said pumping station to a point on East Front Street to be reached by a reasonable, convenient and practicable route from said pumping station, to be used by said party of the second part as right of way and to afford said party of the second part a practicable, complete and uninterrupted mode
1004 of ingress and travel to and from its pumping station.

In testimony whereof said parties of the first part have hereunto set their hands and seals on the day and date first above written.

(Signed) B. R. STRONG.
W. M. EPPS.

STATE OF TENNESSEE, *Knox County:*

Personally appeared before me J. E. Hickman, a Notary Public in and for said County, B. R. Strong, and W. M. Epps, the within named bargainors, with whom I am personally acquainted, and who acknowledged that they executed the within instrument for the purposes therein contained.

Witness my hand and official seal at office in Knoxville, Tennessee, on this the 28th day of October A. D. 1896.

[SEAL.] J. E. HICKMAN,
Notary Public.

Received the 30th. day of Sept. 1896 at 10.45 o'clock A. M.
Recorded the 1st. day of Oct. 1896.

M. A. M. ARMSTRONG, *Register.*

REGISTER'S OFFICE, KNOX COUNTY, TENN.

I, Robert Brice, Register of said County do certify that the foregoing is a full, true and perfect copy of the deed from B. R. Strong and W. M. Epps to Knoxville Water Company as the same appears of

record in this office in Book 146, p. 211. Witness my hand at office in Knoxville, this 10th. day of December 1902.
(Signed) ROBERT BRICE, *Register.*

1005 Monda/ Morning, December 8th, 1902, the Further examination of William Wheeler was resumed in the United States Custom House, Knoxville, Tennessee, at 9 o'clock A. M. pursuant to adjournment.

(Continuation of cross-examination by Gen. PICKLE:)

Q. I will ask you Mr. Wheeler whether you are now prepared to answer the last question *O* propounded before adjournment?

A. I think I have answered that question fully, unless the Master should find occasion to reverse his ruling in reference to the same.

(The question was here read to the Master as follows:—"Q. Mr. Wheeler, you have stated in former parts of your deposition that as successor to Wheeler and Parks you are in possession of the books of that Company relating to the construction of the plant in North Knoxville, and that you are in possession of certain letters, correspondence, bills receipts, etc. showing to some extent at least the actual cost of material used in construction of the North Knoxville plant, and that these books and papers are now in the City of Boston. I now ask you to bring these papers to Knoxville so that on our reconvening you may consult them and answer the questions that I might ask you about the actual cost of the machinery, piping and other matters relating to the construction of the Knoxville plant?"

The COMMISSIONER: I have already ruled on that question.

(The WITNESS:) In order that there may be no misunderstanding as to the scope of my declination to bring these books and papers, I will state that I have brought my correspondence with the builders concerning the contracts for installation of pumping ma-
1006 chinery that was installed in 1900 and 1901.

Q. Did you not bring the books also?

A. What particular books do you refer to?

Q. The books of Wheeler & Parks?

A. If you mean the account books, I did not.

Q. You have them have you not?

Mr. CALDWELL: We object to any further inquiry on that point.

COMMISSIONER: I don't see that any harm will be done by his answering the question.

(The WITNESS:) I should repeat the answer I gave you two weeks ago.

Q. Well just answer whether you have or hav-n't?

A. They are in my office in Boston.

Q. Did you examine them while at Boston so that you might be able to answer as to the cost of the various items entering into the construction of the North Knoxville plant?

A. I did not.

Q. Mr. Wheeler, in the estimate you have made of the cost of the original construction, and subsequent additions and renewals of the

Knoxville Water Company's plant, I see you have figured on brick laid in lime in walls at $13.00 per thousand? This does not include the 20 per cent. for engineering, contractor's risks and interest on the money during the period of construction, does it?

A. I think not; I am unable to say definitely without seeing the particular part of my testimony to which you refer.

Q. Adding this 20 per cent., would make the cost of common brick laid in lime in walls $15.60 would it not?

A. I do not understand what you mean by that question.

1007 The 20 per cent. is for something else than the bricklayer's work, and I call the initial cost of the brick there, as I have stated $13.00 per thousand.

Q. Is not this 20 per cent. added on to the $13.00 per thousand, which is the cost of the brick, lime, labor and putting them in the wall?

A. It is added to the primary or initial cost.

Q. Would not that 20 per cent. added make the cost $15.60?

A. It would make the fair apportionment of engineer's services, contractor's services, and interest on capital upon the brick work $15.60.

Q. Then you add the entire 20 per cent. for administration &c., do you not?

A. For certain things stated, of which administration is one.

Q. Then you add $101,000.00 or about that amount for commissions and so forth, do you not?

A. I think that my answer to that would be less definite than my testimony heretofore unless you point out to me to what you allude, as I do not know.

Q. Well you have added $101,000.00 for commissions?

A. My testimony will show what it is for. I hav-n't added it to that item of $13.00 for laying brick.

Q. But the item of laying brick bears its due proportion of that amount?

A. It bears its due proportion of the entire value of the created plant and investment; the purposes of those allowances I have set forth as distinctly as I can, and if you will point out such parts as are not specifically answered, I will endeavor to make them clear.

Q. How much did you estimate as additional cost of laying common brick in the wall in cement instead of lime, per thou-

1008 sand?

A. Different prices, according to the kind of brick and the mixture of cement mortar and the place in which it is laid.

Q. I am inquiring about the wall now?

A. My answer remains as I have given it.

Q. Well about how much do you add for each kind of cement?

A. I will have to refer you to my testimony, which I have set out with definiteness.

Q. You have not set out the difference between laying brick in lime and cement have you?

A. I have set out specific amounts for each particular case.

Q. What I want to know is the difference per thousand between

brick laid in the wall in cement, and common brick laid in the wall in lime?

A. I have stated to you that there were different prices, according to circumstances. I will have to refer you to my testimony for that.

Q. Well will you point to a particular part of your former testimony that explains this matter?

A. If you will refer to page 24, volume one of my testimony you will find an item of "Brick laid complete in lime mortar at $13.00" and passing on, you will find on page 44 of my testimony in same volume an item of "Brick in hydraulic cement in foundation at $15.00 per thousand." The distinction in those two cases is that one was laid in lime mortar and the other in hydraulic cement. On the same page "44' you will find an item of "vitrified brick in Portland cement at $25.00," the distinction in that case being that it was a different kind of brick laid in a different kind of mortar.

1009 And so you will find at various places in my deposition brick laid in various kinds of mortar at various prices—the considerations which enter into the cost are stated, so far as the kind of materials employed are concerned. One familiar with brick laying and materials, knows also that different amounts of cost and labor are involved in laying brick of different kinds with mortar of different kinds. For instance lime mortar is the most simple and easy mortar for the mason to handle, and the labor cost is the least. Brick laid in that kind of mortar are usually laid with less care as to filling the joints. The use of vitrified brick involves an additional element of cost—the bricks are non-absorbent, and when used with hydraulic cement, and more particularly with Portland cement, there is an added difficulty, because of the additional labor of laying brick with fresh cement mortar, and particularly with fresh Portland cement mortar, as we always required brick to be laid in cement that has not set, although masons like to use it in mortar that has once set, but the work is impaired by pursuing such a course. The brick being vitrified, they are non-absorbent and slip on the mortar and do not keep their place as well. These brick which have been laid under our requirements in this work have been laid in a very different manner from which bricklayers would ordinarily lay brick if left to their discretion, and that is particularly true with those portions that are laid with cement mortar.

Q. Was there anything extraordinary by which the brick were laid in this particular plant?

A. What do you mean by "extraordinary"? Anything different from what I have just described?

1010 Q. Anything different from the original manner of laying brick in walls?

A. I have just stated that there was.

Q. In the original construction, I say?

A. The original construction I have not referred to, as being laid different and I do not assume that they were.

Q. Then the least difference that you make b-tween laying common brick in walls in lime and laying common brick in walls in cement, is $2.00 per thousand?

A. So far as I now recall, that is so, but I am unable to say positively whether that is the case or not.

Q. Mr. Wheeler, I notice that you estimate earth excavation at 30 cents and rock excavation, as a rule at $1.87½. This does not include the 20 per cent. for engineering, contractor's risks and interest on money during construction, does it?

A. If you will point out the specific case and price, I prefer to answer your question in that manner.

Q. Let me have the record then. As an instance, I refer you to your evidence on page "46" "Rock excavation, 308 cu. yds. at 1.875, $577.50" I will ask you if that item includes the 20 per cent. referred to, or added on?

A. The record very clearly shows that the 20 per cent. is added to that, and it is equally clear that that is the initial cost.

Q. Well, isn't that true of all the items in your estimate for the excavation of earth and rock that the 20 per cent. is added?

A. So far as I recollect, that is true.

Q. Adding this 20 per cent., would make the earth excavation 36 cents, and the rock excavation $2.25 wouldn't it, per yard?

1011 A. What do you mean by that, if I may ask? Is there anything lacking by way of explanation by which the intent is not made clear, and which you wish to have made clear?

Q. I am asking you the question.

A. Well sir, I have answered it.

Q. I notice that you charge pipe at $35.00 per ton of 2000 lbs. f. o. b. in your estimate of the original cost of the plant, and I believe of all additions made up to 1884?

A. Yes sir I think that is correct.

Q. This is exclusive of the 20 per cent. for engineering, contractor's risks and interest on money during construction, is it not?

A. It is.

Q. Adding that 20 per cent. per ton, would make it $42.00 per ton?

A. You will have to define what you mean. You are dealing with different percentages, and I should choose to have your meaning set out when you allude to 20 per cent.

Q. Well you have added on to the cost of pipe at $35.00 per ton, as well as on the other items of your materials 20 per cent.?

A. I have, to the best of my judgment, as to what the fair allowances for engineering, contractor's profits &c. upon the completed plant and property would be.

Q. Now when this 20 per cent. is added and distributed to the ton, it would make it $42.00 per ton?

A. It does not make the purchase price of the pipe $42.00 per ton.

Q. Well what is the 20 per cent. for then?

1012 A. If you do not understand it, and will state in what particular you do not understand it, I will endeavor to explain to you.

Q. Well you charge for laying the pipe, in addition to this $35.00

per ton of 2000 lbs. and in addition to the 20 per cent. added on its cost, do you not?

A. We charge for laying it, yes sir.

Q. And that charge for laying is additional?

A. Certainly.

Q. And you charge this same 20 per cent. on the price of laying the pipe?

A. On the initial price, without engineering supervision, and without capital, yes sir.

Q. And you charge for putting in the valves also?

A. The record shows I have charged for the valves—they have to be purchased.

Q. And for putting them in, don't you?

A. No sir, there is no special charge for setting a valve; that is included in the cost of laying the pipe.

Q. Do you mean to say that the price you have estimated the valves at, is the actual cost price?

A. That is supposed to be the actual cost delivered on the ground, with no charge for setting.

Q. In the original construction to 1884, I will ask you to state what is your estimate for laying different sizes of pipe per foot, exclusive of the 20 per cent. and inclusive of the 20 per cent.—state in both aspects?

A. By laying, do you mean excluding the cost of the pipe itself?

Q. Yes sir, I want to know what amount you charge for laying per foot the different sizes of pipe, exclusive of the 20%, and
1013 then with the 20% added?

A. My estimate for cost of hauling and laying the pipe complete, exclusive of rock excavation in the original construction up to 1884, is as follows:—

16"....57875
14"....445
12"....365
10"....3025
8"....2625
6"....2125
4"....16

Apportioning to that its fair share of cost of engineering, contractors services, expenses, profits and uses of capital during construction amounting to 20 per cent, would make that apportionment upon each of those items one-fifth additional, to wit,

16"....6945
14"....534
12"....438
10"....363
8"....315
6"....255
4"....192

Q. This does not include rock excavation does it?

A. They do not.

Q. About what per cent. should be added for rock excavation to the above estimate?

A. I couldn't tell you that; I never estimate rock on a percentage.

Q. What per cent. of the excavation made for the laying of distribution pipes do you estimate to have been rock excavation, and what per cent. earth excavation?

1014 A. I have estimated on the basis of our experience in Knoxville and vicinity that there would be one cubic yard of rock in 100 lineal feet of trench.

Q. How much in dollars and cents have you added to the above estimate for rock excavation made in the laying of distribution pipes up to 1884?

A. As I have just stated, I have assumed and estimated that there would be one cubic yard of rock in 100 lineal feet of trench, and I have estimated that cubic yard of rock at $1.75, which reduced to the basis of one foot of trench would be 1¾ cents per lineal foot of trench as my estimate for the rock work.

Q. Does your estimate for laying pipe above stated include the ditching?

A. It does.

Q. Does it include restoring the street?

A. It does, with the exception of macadam.

Q. What did you charge for restoring macadam per lineal foot additional to the above?

A. I estimated that macadam was to be restored upon one-half of the length of those streets in which cast iron mains were laid, but excluding wrought iron—smaller pipes—and that the cost per lineal foot of such macadam was six cents, all of which is set out specifically in my analysis.

Q. On what streets did you restore macadam, or was it restored prior to 1884?

A. You mean in name?

Q. Yes, sir.

A. I wouldn't undertake to name them. This assumption is used according to our experience here, particularly that of our experience upon the whole system and not with reference to our

1015 experience in any one year's work, or in any particular portion of the City.

Q. Does the estimate above made include setting valves?

A. It does.

Q. Lead for joints?

A. It does.

Q. Filling and calking joints?

A. It does; lighting and guiding trenches, foremen and all work pertaining to hauling and laying of the pipe and resurfacing the streets, with the exceptions stated.

Q. Now, Mr. Wheeler, will you give me the estimate per lineal foor of the cost of furnishing the several sizes of pipes from 16 inches down to 4 inches, including pipe at $35.00 per thousand, and

the laying of the pipe, and the rock excavation and the restoring of the macadam?

A. That is all given in the analysis General.

Q. But it is not given in that way, Mr. Wheeler—I mean without the 20 per cent. added for engineering, contractor's risks and interest on money?

Mr. CALDWELL: This is a mere question of arithmetic of which the basis is fully set out in the witness' deposition, and it appears to us to be a useless consumption of time, and making a demand upon the witness which he ought not be made to comply with.

(The WITNESS:) This asks for no information which I have not given or which is not in the record.

Mr. PICKLE: Different experts adopt different bases, and I want to see what his is, for his analysis is not probably such as other experts might make.

COMMISSIONER: The exception is over-ruled.

1016 A. In answer to that, I will say generally that the charges for rock apportioned upon all the cast iron pipe are 1¾ cents per lineal foot. The charges or estimate for restoring macadam apportioned upon all the pipe, is 6 cents for one-half the length, or 3 cents for the entire length of the street, making for both rock and macadam 4¾ cents to be added to the prices which I have given throughout the analysis. Now I will add those if you desire.

Q. Well, what does it make?

A. In the case of pipe assumed to have been laid prior to 1884:—

16	inch,	per	foot	$2.8575
14	"	"	"	2.2775
12	"	"	"	1.8475
10	"	"	"	1.4175
8	"	"	"	1.0275
6	"	"	"	.8375
4	"	"	"	.5575

Q. Now in the estimate you have made, you have apportioned the 6 cents for replacing macadam over the entire system, have you not, at 3 cents?

A. Three cents over all the cast iron pipe.

Q. Yes; well now, in point of fact that part of the plant or pipe laid on the streets where there was macadam restored would be three cents more than these amounts, would it not?

A. I have so assumed, and where there was none, three cents less.

Q. Mr. Wheeler, what are the estimates of the weight of these several sizes of pipe per foot?

1017 A. You will find the weights of the pipe assumed to have been used in the original construction, on page "32" being the weights contained in parenthesis following each size of pipe.

Q. Please state them there?

A. To wit:

16	inch	127.5	pounds	per	foot.
14	"	102.0	"	"	"
12	"	82.0	"	"	"
10	"	61.0	"	"	"
8	"	41.0	"	"	"
6	"	33.0	"	"	"
4	"	20.0	"	"	"

The weights allowed for pipe after I became interested in the property, you will find on page "35" and at subsequent pages wherever a size of pipe is first used in my analysis for which the weight has not previously been given. Those weights, taking sizes from 16 inches downward, which I now happen to find on page "37," are as follows:—

	16	inch	116	pounds	per	foot.
	12	"	75	"	"	"
	10	"	58	"	"	"
	8	"	43	"	"	"
	6	"	30	"	"	"
	4	"	20	"	"	"
and on page "40"	18	"	140	"	"	"
and on page "47"	20	"	165	"	"	"

Q. How did you get the weights of the pipe used in the original construction, Mr. Wheeler?

A. I got those from one or two different copies of depositions made in the case of the Knoxville Water Company against the Board of Mayor & Aldermen in the year 1887.

1018 Q. From whose deposition?

A. Those weights were based upon the deposition of George E. Downing, taken in the case to which I have referred, in which he said "We contracted with the Knoxville Water Company, August 14th 1882 to furnish them with the following amount of pipe:

305	feet	16	inch	pipe	125	pounds	per	foot.
2272	feet	14	"	"	100	"	"	"
2340	"	12	"	"	80	"	"	"
458	"	10	"	"	60	"	"	"
8000	"	8	"	"	40	"	"	"
17675	"	6	"	"	32	"	"	"
9795	"	4	"	"	20	"	"	"

To such normal or contract weights, I have added 2 per cent. for what I call casting margin. Such pipe is usually purchased upon a stipulation that the actual weights shall not exceed the normal or contract weights by more than four and sometimes five per cent. It has been my observation that the pipe furnished over-run upon the average normal weights, and such excess we pay for up to 5 per cent., or 4 per cent. if that is the limit. I have always used 2 per cent. as such an average and that conforms to my experience, and

2 per cent. added to the weights named in that deposition yield the weights used in my analysis, to 1891.

Q. So you have added 2 per cent. to the weights given in that deposition, have you?

A. To the normal contract weights to which I have testified specifically. This deposition was taken by me from page "250" of the Court record in that case.

Q. Who was Mr. Downing from whom you quote?

1019 A. I have no personal knowledge of him except as appears in his deposition.

Q. Was he a representative of the company that furnished the piping?

A. He then testified that he was the General Business Manager of the Chattanooga Foundry and Pipe Works, Chattanooga, Tennessee, and that he was with the predecessors, D. Giles & Company from September 1st 1881 to the organization of the new Company in July 1882, and I understand that the pipe was furnished by this Company.

Q. Have you ever weighed any of this pipe? Have you weighed it in order to ascertain its actual weight per foot?

A. No sir I have not.

Q. Did you obtain the pipe that you used after you came into the possession of the plant from the same parties?

A. Some of it I did.

Q. Did you obtain the same sort of pipe, weight, quality, &c.?

A. No sir, I used weights in some cases nominally a little less and in some cases the same.

Q. You have stated that you took up considerably pipe about the time you came into possession of the plant; Mr. Wheeler why was it taken up—had it become deteriorated and useless?

A. No sir, not as a rule; some of it was, but as a rule it was taken up by reason of the larger demands of the growing community.

Q. Hadn't a portion of it, one-half a mile or more, been laid so that it was eaten up with rust at that time?

A. I think that I have already testified that there was one

1020 piece of pipe, one-fourth to a half a mile in length that was taken up because it was deteriorated, and that that deterioration was caused on account of having been laid in a fill along side the railroad track that was made with cinders and ashes. With that exception, I think no pipe has been taken up because it had deteriorated beyond usefulness.

Q. What sized pipe was that?

A. Six inch.

Q. Mr. Wheeler, have you a survey showing the pipe laid in the city and the streets on which it was laid, and the sizes.

A. I have.

Q. Will you make it an exhibit to your deposition?

A. Do you now refer to the note books or plans?

Q. I mean a map?

A. Yes sir, the maps have been here from time to time. They are very voluminous, but I shall be glad to put them in. I will designate them afterwards as maps Nos. — to —.

Q. How do you get the weight of pipes that you have put in since you have had control?

A. From the contracts, or orders for pipe upon which it was purchased.

Q. What per cent. did you add to the weights of those pipes?

A. I think I added 2 per cent. to the nominal or contract weights.

Q. Do you know whether you have actually paid an additional 2 per cent.?

A. I know I have actually paid whatever the pipe weighed,
1021 and it usually weighed 2 per cent., more or less in excess of the contract weight.

Q. But you have the actual weights of these pipe?

A. I have inspector's reports showing the actual weights. All the pipe which have been put into this work under my direction, has been purchased as I stipulated at nominal weights. It is inspected on its arrival and a report made by the inspector of the marked weight of each piece and of the excess weight above the contract price.

Q. Who made that inspection?

A. Various of my assistants from time to time.

Q. Mr. Kimball, has he made any?

A. Personally he may have made a few, but I think that as a rule a subordinate of his.

Q. Who?

A. Charles L. Bowker perhaps has made more than any one else. I wouldn't be able to name others beside him at present.

Q. Turn for a moment to the Lonsdale Beaumont plant. You have stated heretofore that the Real estate aggregating in your estimate $3600.00, $600.00 worth of which is still in use, was estimated by you at less than its cost value to the Lonsdale Beaumont Company. Why did you estimate it at less than its cost value Mr. Wheeler, since you were trying to make up an estimate of the cost of the plant?

A. I was trying to make up an estimate of the fair cost value if I might inject that to qualify your last statement. The principal reason for which I modified what appeared to be the record value in the case of one part of that property, I am not now clear
1022 about, but my present impression is that there was one piece of property acquired by the L. B. Company first by an individual, who afterwards became interested in that company, and it was conveyed about that time at a different price from which he had recently acquired it, and that I made some modification of the final price at which it had been conveyed to the L. B. Company, taking that into account—the precise facts I am not quite clear about now.

Q. The real estate that you estimated at less than cost value, lies outside the City, and does not at present constitute a part of your plant?

A. I think that is true of all the land of the L. B. Company, at least it is true of this particular land to which you refer.

Q. Are you able now to give the cost price of that property?

A. No sir, I haven't the data with me which I had at that time.

Q. Well, if the property of the Lonsdale Beaumont Company which lies outside the City is estimated at less than cost and that which lies inside the City and used now, at cost, then wouldn't there be an undue proportion of the value of the plant assigned to the City?

A. No sir, that doesn't so appeal to me; as I understand it, none of the L. B. land lies within the City.

Q. But a proportion of its property lies within the City?

A. Yes sir, of the works, but I understand you to be dealing with the land of the company.

Q. At any rate, the property that you estimated at less than its cost value, lies outside the City?

A. It did.

1023 Q. And is not now in use as a part of the Knoxville Water Company's plant?

A. It is not.

Q. Now you state Mr. Wheeler that you have estimated the piping from the stand-pipe out in the country to Knoxville as a part of the plant lying outside the City; that is essential to the service of the City now?

A. Yes sir.

Q. You have abandoned that water supply out there have you not?

A. The L. B. water supply, yes sir we have.

Q. You convey water from the reservoir here—river water—to that stand-pipe, do you not?

A. We do.

Q. What is the necessity of having that stand-pipe three or four miles distant in the country?

A. To equalize the pressure at high points on that side of the City, and to relieve the pumps here of excessive lift in pumping; also to relieve the stand-pipe here of the necessity which would exist, of greater elevation if the high service was supplied from the stand-pipe at East Knoxville alone.

Q. Well if the stand-pipe had not already been located three or four miles from the City when you purchased the system, would you have had to go that distance from the City to accomplish these purposes?

A. Well we would have had to have a high service stand-pipe on that side of the City, or else to have increased the height of the stand-pipe on the East side of the City to have secured equally

1024 effective results and equal economy in operating the plant.

Q. But there is nothing gained in the distance; it would have served the purposes of the City as well to have conveyed it out there wouldn't it?

A. Do you mean to ask whether there is any good purpose served in having a stand-pipe out that remote distance?

Q. Yes sir.

A. Yes, there are two purposes: first is the elevation of the land,—availed of only by going that distance, which of course reduces the height of the stand-pipe itself and hence its cost—that is the main purpose. The other purpose is that the stand-pipe there is in close

proximity to various high points which now or hereafter are likely to require high service, some of which are outside the city limits.

Q. How far is that stand-pipe from the community which it supplies with water?

A. It supplies the community all around it, but most of the community which it supplies lies to the east of it.

Q. Toward the city of Knoxville?

A. Toward the City of Knoxville; in the City of Knoxville, and especially West Knoxville.

Q. Now it is necessary in order to get water to put a pipe in from your reservoir to that point?

A. No sir, we availed of the pipe which the L. B. Company had laid there. It is necessary to have a connecting pipe to get water into it.

Q. You have such a pipe?

1025 A. There was such a pipe in use by the L. B. Company.

Q. To convey the water?

A. Conveying the water from that stand-pipe into West Knoxville.

Q. Yes, but I am asking about getting pipes out there?

A. We simply connect the Knoxville Water Company's mains, with the Lonsdale Beaumont Company's mains in West Knoxville.

Q. The water supply really comes from here?

A. The water comes from the main plant of the Knoxville Water Company.

Q. Are there not plenty of elevations between that point and West Knoxville and the city of Knoxville that would have served the purpose?

A. Not with equal height with that.

Q. Don't you know that that stand-pipe was put up out there that far from Knoxville by reason of the fact that it reached the water supply at that point?

A. No sir, I don't know the particular considerations which governed the designers and builders of those works.

Q. The water stands at some height in that stand-pipe as it does in your stand-pipe here in Knoxville?

A. Except as affected by the conditions of flow through the intervening pipes.

Q. That pipe runs a considerable distance beyond the corporate limits of the City of Knoxville, doesn't it?

A. Some distance beyond the corporate limits of the City of Knoxville, or that part of it which was formerly West Knoxville, but how far, I am unable to say. Such a stand-pipe, by way of illustration, might have been erected on Ft. Saunders if the land

1026 had not been so expensive as to have made the cost too great, and probably its erection would have been objectionable to residents of that hill.

Q. Mr. Wheeler, has your company increased or reduced the pressure in West Knoxville since buying the plant?

A. Not so far as I am aware.

Q. Have you a schedule charged by your company—a schedule

of rates—prior to the schedule of April 1st 1895, and if you have, will you please exhibit it?

A. Yes sir, I think it has already been put in as an exhibit to my deposition, but as I have already stated, they are very incomplete and do not represent the practice of the water company at that time.

Q. How long were these rates in force prior to the 1st of April 1895?

A. I am unable to say; but as I have said, they are very incomplete, and they do not accurately or completely represent the practice of the Water Company as of that time.

Q. It was however, your schedule of rates, and your only schedule of rates at that time, wasn't it?

A. I don't know what you mean by that question. I have stated specifically that it does not completely represent the practice of the Water Company as of that time.

Q. State then in what it differed?

A. I cannot tell you.

Q. This was printed and distributed as the water rate of the company as of that time?

A. On the back of this schedule is a form of bill, by which bills for water service were rendered and which came to the notice of water takers, and you will find, if you will examine those rates that they are not always specific, and do not cover all the kinds of service or fixtures which the schedule adopted by the Company in 1894 or 1895 covers. You will remember that I stated, and the records of the company show, that because of inequalities and the incompleteness of the previous schedule, that new schedule of rates of April 1st, 1895, was made and adopted.

1027

Q. Mr. Wheeler, as a matter of expert opinion, I will ask you whether Water plants that are owned by private corporations are operated more or less cheaply than plants operated by cities as a rule?

A. I don't think there is a rule governing that. Some private water plants are operated much more thriftily than others, and some muncipal plants are operated much more wisely than other municipal plants, but I wouldn't undertake to state what is the rule in regard to the one as compared with the other. I have known municipalities on acquiring properties to raise the rates, but I have never known a reverse condition to follow.

Q. But if a municipal plant raises its rates to excess, it goes into the public treasury, don't it?

A. I don't know; it may go to satisfy a newly created demand for money.

Q. At any rate it goes to the public's benefit don't it?

A. I am not so sure about it always.

Q. Well it should go there shouldn't it?

A. It should go there, but I don't undertake to state as to where it does go.

Q. Mr. Wheeler has any part of the Knoxville Water Company's plant that was in use on the 31st of March 1901, lying either inside

or outside the City, been abandoned up to the present time, and if so, when and what?

A. Yes sir, incident to the laying of certain larger mains, certain of the smaller pipes have been replaced with larger ones in
1028 the same manner as such replacements by larger pipe were made prior to March 31st, 1901. The extent of those changes, I shall be glad to submit in addition to my deposition, bringing those facts down to, say September 30th 1902; that is a year and a half subsequent to the passage of this ordinance.

Q. Had that part of the Lonsdale Beaumont Water Company's plant which lies outside the City, excepting the stand-pipe, been abandoned by your company prior to March 31st 1901?

A. Certain portions of it had.

Q. Have other portions of it been abandoned since?

A. I am not quite certain whether there have been any changes in that regard since March 31st, 1901, or not.

The further taking of this deposition was adjourned until 2 o'clock P. M.

MONDAY, *December 8th*, 1902—2 o'clock p. m.

Cross-examination of WILLIAM WHEELER resumed:

Q. Mr. Wheeler, you stated that you purchased a controlling interest in the original stock of the Knoxville Water Company from certain citizens of Knoxville, consisting of 1350 shares. What did you pay per share for this stock?

A. I paid $50.00 a share as of December 1st 1890 plus 6 per cent. to the times of the several payments made on account of deferred payment thereof.

Q. You paid then fifty cents on the dollar?

A. Fifty cents on par value of one dollar, plus six per cent. interest thereon from December 1st 1890 to the time when the
1029 several payments on account of the purchase price were made to complete it.

Q. Mr. Wheeler, have the $85,000.00 debenture bonds been lifted?

A. They have, this year.

Q. How were they lifted?

A. I will have to refer you to the Treasurer for that. They have been bought in and cancelled is all I can tell you.

Q. Did you pay cash for them or substitute other bonds?

A. I am not quite sure about that; possibly part of each method, but the Treasurer can give you that.

Q. What interest do the substituted bonds bear?

A. I should have to refer you to the Treasurer for that.

Q. Were they not substituted for the bonds, the 4 or 4½% bonds issued under your last mortgage?

A. I am going to refer you to the Treasurer for such information. I cannot give you a complete statement and I therefore prefer not to give any unless it be a complete statement.

Q. Has any part of the floating debt been funded in these bonds?

A. I think part of it has been funded.

Q. What per cent. interest does the funded debt bear?

A. I think I have testified that whatever mortgage bonds the company have issued have been on their face 4½%, although they have not been sold at par. So far as they have been sold, they have been sold at a discount as I understand, and have been sold to a very limited extent, the particulars of which I cannot give you.

Q. Mr. Wheeler, in a former part of your deposition, you have stated that other water companies furnished the money that
1030 was borrowed by this company in part at least. Does this company belong to a syndicate that owns a number of other companies?

A. No sir it does not.

Q. Is it one of a combination of companies of which you and others have control?

A. No sir, not upon any common basis; it has no relation to any other company, except that some of the stockholders of this company are also stockholders of other companies, but there is no common ownership of any kind.

Q. Is there a company that does the purchasing and charges a per cent. for making purchases for this and other companies?

A. There is not.

Q. Then this company gets the purchases that are made on its behalf precisely at the price at which the purchase is made?

A. It does absolutely, and with whatever advantage of personal influence its management can secure.

Q. Mr. Wheeler, since you have been in control of this company, have you rendered an annual report of any sort to the directors or stockholders at their meeting?

A. No sir, not formally. I have made from time to time tabulations or summaries of its extensions and the additions to its plant, and have tabulated them in what I call the "Construction Record Book" of the company, which book has been at the disposal of the directors and stockholders for their examination at their several meetings, but there have been no formal reports.

Q. There have been no printed reports?

1031 A. No sir. I have made one or two reports upon special conditions existing and for special purposes, but have never made any regular annual or printed reports.

Q. Are such reports made by any other officer of the company to the directors or stockholders meetings?

A. The treasurer makes an annual report, it being merely a typewritten statement of the financial condition. It is not published however.

Q. Those reports are in his possession, are they?

A. I presume they appear on his books or in his files. They are not even distributed to the stockhelders.

Q. This company has two offices, hasn't it, one at Knoxville and the other at Boston?

A. Properly speaking, I would not say it had two offices. Its general office for the transaction of business is in Knoxville, but its

Treasurer has his office at Boston, and the books of the Treasurer are kept in Boston.

Q. Are they the original books, or simply summaries from books here?

A. They are the original Treasurer's books.

Q. What is the expense of maintaining the Boston office of this company?

A. I should have to refer you to the Treasurer for that information; I could not tell you.

Q. There is no necessity for the Boston office except the fact that the Treasurer lives there, is there Mr. Wheeler?

A. It must be somewhere; it is necessary to have a Treasurer's office for the proper administration of the business.

Q. The Company has abundance of office room here, has it
1032 not?

A. Abundance of room, geographically speaking?

Q. Yes sir.

A. Oh yes, there is room enough here.

Q. That Boston office is mantained as an office in common for this and several other companies, isn't it?

A. The Treasurer of this company is the Treasurer of some other companies, which I think share in the expense of the office. I consider the affairs of the company very much more efficiently and economically managed under the existing arrangement than would be if the entire business was done by the Company's local representatives.

Q. You think it better to have two offices, one being a thousand miles from here, than one?

A. I do; I think it decidedly better than ever devised or pursued by this company before.

Q. It was managed without a Boston office prior to the time you and your brother became interested or connected with it, wasn't it?

A. It was without a Boston office or a non-resident office part of the time. My impression is there was a time when it was virtually under the control of a New York party.

Q. Who was that New York party?

A. George P. Sheldon.

Q. Mr. Wheeler, do you make reports as Supervising Engineer?

A. I have just stated to you that all the reports I made were occasional special reports as Supervising Engineer.

Q. You don't make regular reports then?

A. Not regular reports except as they may be called for orally at directors' meetings.

1033 Q. On page "276" of your deposition you state that you are informed that prior to your connection with this company that service pipes were put in by plumbers. Can you state at what price they were put in?

A. I do not know, but I presume at whatever price the plumber chose to ask, or negotiate with the taker.

Q. You don't know what those prices were as a rule?

A. They were plumbers' prices; I have no idea that there were any uniform prices.

Q. How many meters did you have on the 31st of March 1902?

A. That information I should be able to furnish you in the extension of my analysis down to September 30th 1902. It is not quite finished as yet. I presume it will go in in my re-direct testimony.

Q. Do you know how many there were?

A. I would rather not guess, as I am to have the definite figures later.

Q. What was the capacity of the plant of the Knoxville Water Company when you bought it in December 1890; I mean what sized City population would it reasonably supply?

A. I think I have testified in full upon that point twice, both times on cross examination.

Q. Then what sized city did you say?

A. Well I will hunt it up in the record. I should choose not to be asked to testify several different times on the same point. It is not in exact or precise terms that such a question can be answered each time, and having done so once or twice, it seems to me that that answer should suffice.

Q. What is the capacity of the present plant Mr. Wheeler?

1034 A. Our present Deane Pumping engine which is now in use as an auxiliary, has a normal and effective capacity of pumping from four to five million gallons of water in 24 hours, which is a suitable quantity at the average rate of consumption in communities of 25,000 to 40,000 or 50,000 population if run say 12 hours a day. The Worthinton Triple Expansion engine last installed, has a capacity of from six to seven million gallons a day, or practically 40 per cent. larger. The capacity to serve population depends upon many considerations, as to whether the pumps are to be run 10 hours per day (as is common in many cases) or 12 or 24 hours a day, all of which periods of running obtain in different places according to the consumption, which may range from as low as forty or fifty gallons per capita daily, and which obtains in some few instances under very careful supervision and control, up to one hundred to one hundred and fifty per capita daily, which is not an unusual amount in cities of from 50,000 to 100,000 population, where the consumption or waste is not subject to careful scrutiny or regulation.

Q. The city of Knoxville is and has been since you have known it, a growing city, increasing in population and demand for water supply, has it not?

A. It is.

Q. Mr. Wheeler, what proportion of the pipe in the original construction of this plant was laid on streets that were macadamized, and what proportion on streets that were not macadamized?

A. I couldn't tell you that. I stated this morning that my assumptions as to macadamized streets were based upon the conditions found as of 1890, and from thence down to the time of my

1035 study of the case, and as to the specific streets, I relied for my information upon what the superintendent was able to tell me.

Q. You have no personal knowledge of any of the streets of Knoxville being macadamized as far back as 1884?

A. Oh I wasn't here prior to 1890 and therefore would not have knowledge of conditions existing prior to that time.

Q. What proportion of the streets have you assumed in your estimate were macadamized?

A. I have assumed that one-half the length of the streets in which cast iron pipes were laid have, upon the average of conditions existing from time to time, been macadamized.

Q. Mr. Wheeler, on page "54" of your deposition I find under the head of "Pumping Machinery and Appurtenances" an item of $3000.00 for "compound condensing, direct duplex steam pumping engine 9" and 18½" steam cylinders, 14" water plungers x 18" stroke, with one surface condenser in line of suction pipe, 1 air or vacuum pump 4½" steam and 6" pump cylinder x 6" stroke, erected exclusive of foundation" and run out at $3000.00. Have you the correspondence concerning which this purchase was made by the company?

A. I have not here. That machinery was erected by Wheeler & Parks under the contract of November 17th 1893.

Q. Can you state what was the actual cost of that to Wheeler & Parks?

A. I cannot at present.

Mr. CALDWELL: I object to the question.

Q. Mr. Wheeler, on page "55" under the head of "Filtra-
1036 tion Plant," I find an item run out on page "56" of $23,300, and described as follows: "Original installation, comprising 14 gravity filters of the Warren type each 10′ 6" diam. with connecting piping, valves, alum coagulation apparatus, clear water weir tank with Westinghouse vertical engine and shafting, pulleys, hangers and belting, operating floor and with provision for future addition of 4 more filters. (Not including settling basins, which are included under "A" "*a*" hereof.)" I will ask you what was actually paid for those filters, and have you the correspondence making the contract for same?

A. I have not here.

Q. Can you state the price that was actually paid for these filters?

A. I cannot exactly—by Wheeler & Parks, I suppose you mean?

Q. Yes sir, of course?

A. No sir I cannot state it exactly.

Q. On page "63" of your deposition under the head of "Pumping Machinery and Appurtenances" I find an item of $1150.00 for "2 Additional boilers and appurtenances." Have you the correspondence by which that contract was made for those boilers?

A. No sir, I have not here.

Q. Can you state from recollection, or by refreshing your recollection, what was the actual cost of these boilers?

A. No sir I cannot specifically.

Q. On page "64" of your deposition I find an item of $13,175 for "1 Deane vertical direct acting, compound, condensing, duplex,

steam pumping engine" with some attachments to same. Have you the correspondence by which you purchased this machinery?

1037 A. I have not here.

Q. Can you state from recollection, or by having refreshed your recollection what was the actual cost of this machinery?

A. Not the actual cost; these all come under the same category. It is fair to say that these sums here are the estimated fair initial cost prices of such items as of that time.

Q. Well you have been requested repeatedly in this deposition to look to your books and state the cost price, why have you not done so?

A. I think I have stated my reasons. I have given here the fair cost price and have not undertaken to set out a transcript from the books for reasons very apparent, because that sort of evidence is very incomplete, and the supplementing of a few exact figures on certain parts, would in my judgment, complicate very much an investigation of this sort.

Q. You have been to Boston since you have been asked about the price of these things and about the production of the Wheeler & Parks books to show these matters, have you not?

A. I have, and I have brought back with me the correspondence concerning the matters you have asked me and it is here at your disposal now.

Q. What matters do you refer to?

A. To the Worthington Pumping Machinery installed in 1900 and 1901.

Q. I have asked you about the cost to Wheeler & Parks?

A. Yes sir, but Wheeler & Parks ceased to exist long prior

1038 to that date, and I stated to you this morning that I had not brought Wheeler & Parks' account books with me.

Q. On page 71 of your deposition appears an item of $4800.00 being "4 Additional gravity filters of the Warren type." Have you the correspondence that resulted in the purchase of these filters?

A. No sir I have not.

Q. Do you know what their actual cost was?

A. I cannot tell you specifically.

Q. Have I not repeatedly asked you about the cost of the machinery to Wheeler & Parks in former parts of this deposition?

(No answer.)

Q. On page 304 of your deposition you stated as a basis of your estimate you made a survey of the works and buildings of the company. I will ask you if you have not already done so to produce and file the surveys that you refer to as having been made the basis of your estimate?

A. Those surveys are surveys made by Mr. Kimball, who was then my assistant, and they are contained in a large number of note books which I have in my possession. Such of those field notes as Mr. Kimball or I anticipated might be of use in this inquiry, I had sent from Boston, and they are in his possession, and such information as you desire from those note books as to surveys, I should ask you to make of Mr. Kimball, as he alone is able to interpret his own

notes. The surveys as embodied in the plans to which I alluded this morning, I have here, and for the sake of identifying them on the record I will say that they consist of a title sheet, a general plan on a scale of 500 feet to the inch, showing all, or substantially all of the district covered by these works and its pipe system, and 33 plans upon the scale of 100 feet to the inch, showing all the
1039 streets, buildings and pipe lines, and other portions of the work so far as they can be shown upon that scale. They are the plans which were made an exhibit this morning. I would like to add here that these plans belong in the office of the Supervising Engineer. They are drawn on heavy white mounted paper. They are used as the original plans from which to make tracings, the tracings being used for the ordinary purposes of the company, and a second set of tracings is also kept at my office, so that in case one set may be lost in going to and from by Express, we still have another set to fall back on.

Q. What do you mean by "survey of the buildings"?

A. All the dimensions of the buildings are made upon the ground. Its out-lines, dimensions, steps and piazzas are shown on the notes which I have referred to.

Q. Now you speak of several charges for gates. Will you explain just what a gate is, and the necessity for it?

A. A gate is a valve in a pipe by which the water may be shut off or prevented from flowing through the pipe at that point. Its purpose is to shut off the water in a street main, or elsewhere in case it is necessary to repair a break or to cut-in a new pipe for an extension leading out of such a street main; also for separating high from low service.

Q. How many of the gates that you have are for the purpose of separating high from low service?

A. I could not tell you that I am sure. Mr. Kimball can give you that information. I do not undertake to follow all details of that kind.

Mr. PICKLE: Well, I believe that is all I desire to ask at present.

1040 (The WITNESS:) I wish to give notice that inasmuch as the Special Master was not present when the inquiry was made, that I have brought here my letter books, correspondence and all contracts relating to the purchase of the pumping machinery installed in 1900-1901, the purpose of counsel's inquiry being to bring out whether or not I had received a secret commission from the sellers of that machinery. I have in addition to that correspondence brought with me upon my return from Boston, correspondence relating to the boilers and Hawley Draft Down Furnace, and I now give notice that I desire to have those letters examined completely in order to show whether such compensation was ever give- to, or received by me. I wish to have that inquiry exhausted now. General Pickle raised the question or it would never have been raised by any one except him, so far as I am advised.

General PICKLE: The things I inquired about were the Wheeler & Parks books and correspondence which you have not brought.

The last question I asked you was to bring them and the correspondence.

(The WITNESS:) The books to which I refer, and which were called for, are here; the contracts are here and all the correspondence. I also, if I may be permitted to mention it, desire to say that these books throw some light upon another subject. I was asked upon cross examination whether the superintendent did not do all the engineering. Now this same correspondence, these same letter books show very voluminous correspondence with parties furnishing supplies and machinery. Several hundred letters passed in relation to this pumping machinery, which is only one set of items entering into the cost of the entire work.

1041 Mr. PICKLE: I object to this statement going down. The witness has no right to interpose such a statement, and I object to it.

(The WITNESS:) I do not wish to exceed the rule of the Court. I am simply stating a fact which the correspondence shows, and these documents were brought here by me with the statement at the time that while they were not subject to counsel's call, I would bring them if he would put them in the record, in order to show that his insinuations of me were not true.

Mr. PICKLE: I made no insinuations of you.

1042 Redirect examination by Mr. CALDWELL:

Q. Mr. Wheeler, in making out your analysis of the property of this company, did you include a statement and calculation showing the rate of depreciation?

A. Showing the average rate of depreciation, I did make such a calculation.

Q. Was that included in the statement handed the stenographer, or not?

A. It was included in the statement handed to him, but I found when I came to read his stenographic copy of my deposition that that portion of my analysis was not included and I find on going back to my sheets that the pages that contained that part of my analysis, I had not marked for him to copy. The omitted pages comprise in effect the determination or computation of the average depreciation of the plant from the time of its original construction to March 31, 1901, excluding however, that portion of depreciation represented by the discontinuance of parts of the Lonsdale plant, when that plant was consolidated with the Knoxville Water Company's plant—the object of the average rate of depreciation being to determine what is a fair allowance or percentage to make in anticipating what the future depreciation will be as a basis for showing what proportion of the income would have to be set aside to cover that depreciation.

Q. Have you those sheets at hand so that you can hand them to the stenographer?

A. I have.

Q. I will ask you to give them to him then so that they may be included in your deposition?

A. They are as follows:—

1043 *Computation of Average Depreciation of Plant from Original Construction to March 31, 1901, in Terms of per cent. of Initial Amount Invested in the Plant During Each Year.*

Classification and periods.	Net accrued construction amounts.	Annual depreciation. Rate %.	Annual depreciation. Annual amount.
I. Original constr'n to 12/31/91:			
1. Real Estate, 7 yrs.	$11,650.00	0	0,000.00
2. River Station, 9 yrs.:			
A. Engine Ho., &c.	3,806.34	5.5	209.34
	5,923.66	1.625	96.26
B. Boiler House	1,060.44	5.8	61.51
C. Tool House	161.40	3.7	5.97
D. Chimney	2,238.74	3.7	82.83
E. Coal Chute	543.31	2.44	13.26
F. Store House, &c.	289.80	4.04	11.71
G. Engines, &c.	17,143.51	3.49	598.31
G. Boiler (*d*–1)	3,042.00	4.97	151.19
(*d*–2) 1 yr.	2,982.00	5.57	166.10
3. Reservoir, 9 yrs.	33,000.00	1.25	412.50
4. Pipes, &c. (4½) say 5 yrs.	140,102.68	(1+½) (=2.00)	2,802.05
5. Service Pipes, &c.			
6. Meters, &c. (6½) say 6 yrs.	1,696.20	2.50	42.40
7. Tools, &c., 5 yrs.	2,000.00	10.00	200.00
Totals	$225,640.08	(2.15%)	4,853.43
Average = Periods, 6.2 yrs.			
1044 II. To M'ch 31, 1893:			
1. Real Estate	$11,650.00	0	000.00
2. River Station:			
A. Engine House	3,806.34	5.5	209.34
	5,923.66	1.625	96.26
B. Boiler House	1,060.44	5.8	61.51
C. Tool House	161.40	3.7	5.97
D. Chimney	2,238.74	3.7	82.83
E. Coal Chute	543.31	2.44	13.26
F. Store House	289.80	4.04	11.71
G. Engine, &c.	17,143.51	3.49	598.31
G. Boilers (*d*–1)	3,042.00	4.97	151.19
(*d*–2)	2,982.00	5.57	166.10
3. Reservoir	33,000.00	1.25	412.50
4. Pipes, &c. (old)	140,102.68	2.00	2,802.05
5. Service Pipes			
6. Meters	1,696.20	2.50	42.40
7. Tools	2,000.00	10.00	200.00
8. Pipes, &c., No. Knox	32,271.25	1.00	322.71
Totals	$257,911.33	(2.01)	5,176.14
Period = 1 yr.			

Computation of Average Depreciation of Plant, &c.—Continued.

	Classification and period.	Accrued net construction account.	Annual depreciation. Rate %.	Amount.
1045	III. To March 31, 1894:			
	Total previous years.....	$257,911.33	(2.01)	5,176.14
	Net additions March 31, 1893:			
1.	L. B. Real Estate.....	3,600.00	3.46	124.56
4.	Pipes, etc., net.....	12,547.49	1.00	125.47
6.	Meters, etc.....	401.70	2.50	10.04
7.	Tools, etc.....	1,100.00	10.00	110.00
8.	Pipes, &c., No. Knox	394.32	1.00	3.94
11.	L. B. Real Estate Improvements	35,700.00	11.64	4,155.48
12.	L. B. Buildings & Machinery..	15,420.00	11.38	1,754.80
13.	L. B. Standpipe	7,680.00	1.25	96.00
	Totals (1 yr.).....	$334,754.84	(3.45—)	11,556.43

	Classification and period.	Accrued net construction amount.	Annual depreciation. Rate %.	Amount.
1046	IV. To March 31, 1895:			
	Totals previous years.....	$334,754.84	(3.47)	11,556.43
4.	Pipes, etc., net.....	6,563.31	1.00	65.63
6.	Meters, etc.....	442.60	2.50	11.07
7.	Tools, etc.....			
	Net reduction (by end of life)..	—(1,375.00)	10.00	—(137.50)
8.	Pipes, &c., No. Knox.....	1,263.42	1.00	12.63
9.	Filter Plant:			
	A. Buildings.....	2,745.66	2.00	54.91
	B. Boilers.....	1,008.00	5.00	50.40
10.	Standpipe.....	13,505.89	1.25	168.82
	Totals (1 yr.).....	$358,908.72	(3.28 +)	11,782.39

Computation of Average Depreciation of Plant, &c.—Continued.

	Classification and period.	Accrued net construction amounts.	Annual depreciation. Rate %.	Amount.
1047	V. To March 31, 1896:			
	Totals previous years.....	$358,908.72	(3.28+)	11,782.39
2.	River Station:			
	A. Engine House, &c., Net	11,456.34	2.00	229.13
4.	Pipes, etc., net.....	41,702.34	1.00	417.02
6.	Meters, etc.....	439.80	2.50	11.00
7.	Tools, etc.....	350.00	10.00	35.00
9.	High Service Plant:			
	A. Buildings, etc..	12,961.92	2.00	259.24
	B. Engines, etc.....	4,348.98	3.00	130.47
	B. Boilers, etc.....	360.00	5.00	180.00
	C. Filtration Plant.....	30,271.56	3.50	1,059.50
14.	L. B. Pipes, etc.....	58,963.02	1.00	589.63
	Totals (1 yr.).....	$519,762.68	(2.83—)	14,693.38
1048	VI. To March 31, 1897:			
	Totals, Previous years.....	$519,762.68	(2.83—)	14,693.38
2.	Pumping Station:			
	A. Engine house, &c., Net	5,493.30	2.00	109.87
	B. Boiler House, &c., Net	1,647.06	2.00	32.94
	C. Tool House, &c.....	25.00	23.37	5.84
	D. Chimney Stack, &c...	225.00	23.37	52.58
	E. Coal Chute.....	893.76	2.00	17.88
	E. " " Net.....	369.81	23.37	86.42
	G. Boiler, etc., Net.....	2,191.00	5.00	107.55
	G. Engines, etc.....	17,811.72	3.00	1,026.71
4.	Pipe, etc., Net.....	3,995.45	1.00	39.95
5.	Service Pipes, etc.....	900.00	3.00	27.00
6.	Meters, etc.....	404.10	2.50	10.10
7.	Tools, etc.....	50.00	10.00	5.00
9.	Filter Plant:			
	Buildings, etc.....	132.00	2.00	2.64
	Grading and fencing.....	1,046.40	2.00	20.93
16.	L. B. Meters, etc.....	1,149.90	2.50	28.75
17.	L. B. Tools, etc.....	500.00	10.00	50.00
	Totals, (1 yr.).....	$556,597.18	(2.93+)	16,317.54

Computation of Average Depreciation of Plant, &c.—Continued.

	Classification and period.	Accrued net construction amount.	Annual depreciation. Rate %.	Amount.
1049	VII. To March 31, 1898:			
	Totals, previous Years....	$556,597.18	(2.93+)	16,317.54
	2. River station:			
	G. Engines, etc.....	258.00	3.00	7.74
	4. Pipes, etc., Net.....	3,824.46	1.00	38.24
	5. Service Pipes, etc.....	720.00	3.00	21.60
	6. Meters, etc.....	387.90	2.50	9.70
	7. Tools, etc.....	50.00	10.00	5.00
	9. Filter Plant:			
	B. Boilers.....	1,230.00	5.00	61.50
	C. Filtration Plant.....	5,820.00	3.50	203.70
	D. Grading and Fencing	18.00	2.00	.36
	Totals, (1 yr.).....	$568,905.54	(2.93—)	16,665.38
1050	VIII. To March 31, 1899:			
	Totals, previous year.....	$568,905.54	(2.93—)	16,665.38
	2. River station.....	624.00	2.00	12.48
	4. Pipe, etc., Net.....	2,148.62	1.00	21.48
	5. Service Pipes, etc.....	972.00	3.00	29.16
	6. Meters, etc.....	198.00	2.50	4.95
	7. Tools, etc.....	100.00	10.00	10.00
	Totals, (1 yr.).....	$572,948.16	(2.92+)	16,743.45
	IX. To March 31, 1900:			
	Totals, previous year.....	$572,948.16	(2.92+)	16,743.45
	2. River Station:			
	F. Store house, etc.....	(—289.80)	(—4.04+)	(—11.71)
	G. (i) Engines, etc.....	60.00	3.00	1.80
	3. Reservoir.....	126.00	1.25	1.58
	4. Pipes, etc., Net.....	4,188.60	1.00	41.88
	5. Service pipes, etc.....	1,134.00	3.00	34.02
	6. Meters, etc.....	464.70	2.5–	11.62
	7. Tools, etc.....	225.00	10.00	22.50
	Totals, (1 yr.).....	$578,856.66	(2.91+)	16,845.14

Computation of Average Depreciation of Plant, &c.—Continued.

	Classification and period.	Accrued net construction amount.	Annual depreciation. Rate %.	Amount.
1051	X. To March 31, 1901:			
	Totals, previous years.....	$578,856.66	(2.91)	16,845.14
	1. Real Estate.....	5,500.00	0.	0.
	1. Real Estate.....	4,480.00	2.00	89.60
	2. River Station:			
	A. Engine house.....	72.00	2.00	1.44
	E. Coal Shed, etc.....	512.40	2.00	10.25
	F. Fence, etc.....	210.00	10.00	21.00
	G. Engines, etc.....	144.00	3.00	4.32
	4. Pipes, etc., Net.....	14,664.86	1.00	146.64
	5. Service pipes, etc.....	748.80	3.00	22.46
	6. Meters, etc.....	2,574.90	2.50	64.37
	7. Tools, etc.....	750.00	10.00	75.00
	9. Filter Plant, Buildings.....	2,401.52	2.00	48.03
	L. B. 1. Real Estate.....	—(1,000.00)	(3.46)	—(34.60)
	L. B. 11. Improvements, Real Estate.....	—(33,355.00)	(11.64)	—(3,882.52)
	L. B. 12. Buildings and machinery.....	—(14,070.00)	(11.38)	—(1,601.17)
	Totals, (1 yr.).....	$562,490.14	(2.10—)	11,809.96

1052 *Annual Averages and Amounts.*

Classification and periods.	Accrued net construction amounts.	Annual depreciation. Rate %.	Annual amount.	Accumulation to M'ch 31, 1901, com'd at 4½ %.
(1.)	(2.)	(3.)	(4.)	(5.)
I. Original.....	$225,640.08	2.15	4,853.43	From av. date of M'ch 31, 1890=11 y.
	6.2		6.2	
6.2 yrs.....	1,398,968.50		30,091.27 x 1.62258	48,833.62
II. To M'ch 31, 1893, 1 yr.	257,911.33	2.01	5,176.14 x 1.42210	7,360.99
III. " " " 1894, 1 yr.	334,754.84	3.45	11,556.43 x 1.36086	15,726.68
IV. " " " 1895, 1 yr.	358,908.72	3.28	11,782.39 x 1.30226	15,343.74
V. " " " 1896, 1 yr.	519,762.68	2.83	14,693.38 x 1.24618	18,310.60
VI. " " " 1897, 1 yr.	556,597.18	2.93	16,317.54 x 1.19252	19,458.99
VII. " " " 1898, 1 yr.	568,905.54	2.93	16,665.38 x 1.14117	19,017.03
VIII. " " " 1899, 1 yr.	572,948.16	2.92	16,743.45 x 1.09202	18,284.18
IX. " " " 1900, 1 yr.	578,856.66	2.91	16,845.14 x 1.045	17,603.17
X. " " " 1901, 1 yr.	562,490.14	2.10	11,809.96 x 1.00	11,809.96
	$5,710,103.75		151,681.08	191,749.96

Average per cent. = 151,681.08 x 100 = 2.65636 %
5,710,103.75

Column 5 above shows approximately the "Accumulation to M'ch 31, 1901," of the several "Annual Amounts" of Depreciation in Col. 4, amounting to..... $191,749.96
Comparing this with amount of "Total Depreciation" Col. 7, p. 166–H, to wit: with..... 184,742.19

shows an apparent difference of..... $7,007.77

1053 This difference is due to the use of approximations in certain items of the analysis, such as the average dates when construction investments were made, when depreciation began, and accrued, etc., all of which would be magnified through the compounding of interest thereon.

It appears from the foregoing summary that before the L. B. plant enters into the analysis, that is up to March 31, 1893, and also during the last year, to March 31, 1901, after the large accrued depreciation thereon had been taken out of the Construction amount, the average rate of depreciation for each of said years respectively, was as follows:—

6.2 yrs. to Dec. 31, 1891, av. per year..... 2.15 %
1.0 yr. to M'ch 31, 1893 (actually 1.25 yrs.)..... 2.01 %
1.0 yr. to M'ch 31, 1901..... 2.10 %
Average for above 8.2 yrs., giving each equal weight..... 2.127%
" " above 8.2 yrs. according to am't invested..... 2.121%
The average for the 7 yrs., M'ch 31, 1893 to 1900, during which the L. B. plant entered into the analysis, was—giving equal weight to each..... 3.036%
Excluding from consideration the effect of the L. B. plant and its consolidation and consequent depreciation, as bearing upon the probable rate of depreciation *after* March 31, 1901, and taking the final average rate determined as above upon the rest of the plant from the times of its construction respectively to March 31, 1901, we have as the *average annual rate of depreciation*..... 2.121%

For the purposes of this analysis *I assume the average annual rate of depreciation from and after March 31, 1901, to be two (2) per cent.*

1054 Q. What is the average shown as a result on said sheet?

A. The average results, as will appear upon the last page of these sheets, dealing with different periods from the original construction of the work onward, ranged from 2.01% to 2.15% excluding the Lonsdale Beaumont plant.

Q. Why did you exclude the L. B. plant?

A. Because, as I have stated, the particular object of this computation is to determine from the light of our experience in the past what would be a fair allowance to make for depreciation in the future, and the discontinuance of certain portions of the L. B. plant upon the consolidation of the two plants was of a special character, not likely to ensue in any experience that we anticipate for the future. All the other displacements were due to such changes and such condi-

tions as are likely, so far as I am able to foresee, to continue in the future.

Q. Were you able to anticipate when you began your analysis what the average result as shown upon these sheets which we are considering at present, would be?

A. No sir, it was impossible.

Q. Were any of your figures upon any of the items of the analysis prepared with reference to reaching any certain results upon this point?

A. No sir, they were prepared solely, as I think would be apparent from an examination of the analysis, upon the actual experience as to replacement, or the useful life of the various portions of the plant, the use of which had ceased, and upon inferences drawn from that experience with reference to such portions of the plant as remain in use.

Q. How does the result as to this average reached by you compare with your observation and experience in other cases of water works valuation than this?

1055 A. Very closely. Two per cent. has been used in other cases as the judgment of experts as to the fair average allowance to be made for depreciation. I would say that I have made a similar analysis, although not so minutely as in this case, in an instance to which I think I have alluded, to determine as one of a Commission the compensation to be paid by the Commonwealth of Massachusetts to the town of Danvers. In that case, for the purposes of the Commission, I made the analysis and the result was 1.92% or 1.93% annual depreciation. That was a case in which the growth of the town was very much less relatively than here, and in which there were very few elements of replacement by reason of that growth.

Q. You have stated in a former part of your deposition the amount of compensation paid you as supervising engineer for several years. I understand you wish to amend your statement as to the compensation received by you for the year ending March 31, 1902 and I will ask you to do so at this point?

A. I testified on cross examination that the amount which I received as then furnished me by the Treasurer was $1,028.48. I since find that the amount was just $25.00 less—it should have been $1,-03.48. The difference of $25. was an item of $25.00 for the salary of Mr. Mulhall, who is the secretary of the company, and who is also my bookkeeper, and that was apparently contained on the Treasurer's record in one sum.

Q. Do I understand that your analysis of this plant was made upon your information and experience as water works engineer and expert generally, without actual examination of any of the books which contain statements of actual expenditures?

1056 A. Yes sir without reference to any of the account books. Of course I had correspondence and certain contracts for certain elementary parts of the work. I had a general acquaintance with the current prices of pipe and materials but it is true that I have carefully avoided making use of, or refer-ing to account books. My

reasons for that I have tried to explain, so far as Wheeler & Parks books are concerned, and the same is true of the Treasurer's books, and would be true of any account books. It is impossible to relate to any particular item or unit of the work all of the items of cost which entered into that cost, and I am now alluding not to any question of compensation for services which may not have been fully paid for, but I am alluding to such disbursements as moneys applied to pay-rolls, miscellaneous expenses of a great many kinds—office expenses, all of which enter into the work, but which would be impossible to relate to any particular unit prices. For instance, it would be impossible to show from the books—the Treasurer would be unable to do it, and no one individual would be able to show it—what was the actual cost of laying a foot of pipe of the various sizes. It would be impossible to say what was the actual cost of setting a pumping engine so far as the items of labor entering into that are concerned, of teaming, and the same is true of any portion of the work not done under a contract at unit prices. Consequently it would have been impossible to have submitted an analysis, the fairness of which could be tested, from a summation which the account books would show. Of course it would be possible to submit a statement that for cast iron pipe (I speak now of the pipe itself)
1057 such an amount was expended; that for lead, such an amount was expended; that for labor for all purposes and kinds of work, such an amount was paid out, but to relate them to unit prices would be impossible, and I have been unable to conceive of any system the fairness of which could be so well tested as the submission of a statement of specific quantities of work done with an estimate of the specific unit prices. That can be tested by the opinion of experts that may be brought here if desired, to deal with the question, but no expert will be able to take a set of books and to determine from them, or from a statement made up from a set of books, and relate those expenditures item by item to the actual work done.

Q. Don't various parts of the plant such as pipe and others vary from time to time? very much in value?

A. They do; sometimes very much in the same year. An almost invariable rule for instance upon cast iron pipe is that quotations given are subject to change on thirty days' notice, sometimes even on shorter notice, and it is true that in these works as in many others the pipes laid in a certain calendar year have been sometimes bought at various prices for the same size pipe and usually at different prices for different sizes of pipe.

Q. Taking cast iron pipe for illustration; is it possible for such a condition to arise as that the pipe upon running three or five years after it was put down should actually be of greater value than when it was purchased new?

A. Oh yes, that condition exists today. Very little or much the lesser portion of the pipe laid in these works could be replaced today at the prices which I have used in my analysis. In the aggregate the replacement of the cast iron pipe here would cost many thousand dollars in excess of what is allowed for it in this estimate.

1058 Q. About what, if you know, has been the range of the fluctuation in the pipe market in the last ten years?

A. Well the extremes have ranged from I would say $17.00 (averaging all the sizes that we use here from three or four inches up to twenty inch pipe) up to an average at the present time of twice that sum.

Q. If it were conceded that a statement of actual cost of the construction of a plant contained all the elements necessary to be considered in determining present value in an inquiry of this kind, would such a book statement, even under those circumstances afford a proper criterion in such a case?

Mr. PICKLE: I object to the question as calling for an opinion about a matter in which no expert evidence is admissible.

COMMISSIONER: He has already stated that, but let him answer the question.

A. I should say not, one reason being that a book statement is not complete.

Q. Are there elements considered in your analysis that are not covered by such a statement?

A. There are.

Q. You have been asked repeatedly on cross examination for actual construction cost of various parts of the plant and you have stated in your examination in chief that you had no sources of information as to the cost of all these parts. I will ask you if it would aid in arriving at the conclusion we are seeking to give a statement of some of these elements when you are unable to state them all?

Mr. PICKLE: I object to the question.

A. I think it would be very confusing for me to give known prices on a few of them, incomplete in themselves and under-
1059 take to supplement it with an estimate of the balance and with the additional cost entering into these incomplete items. I think if one had desired to make his contributions to this case as blind as possible, that would have been an excellent course to have pursued.

Q. You have said that all the bonds which the contract ordinance of 1899 authorized the Knoxville Water Company to issue, have not been sold. Without going into details I will ask you the general reason why they were not sold?

Mr. PICKLE: I object to the question. The witness has stated that they were not sold, and the reason for not selling them is wholly immaterial.

Mr. CALDWELL: I think that remains to be seen. The Master might hear the answer and if he thinks it irrelevant he might exclude both question and answer.

A. A part of these bonds were negotiated at a discount prior to the beginning of this litigation, but when it appeared that there was litigation between the City and the Water Company, I was told by the purchaser of those bonds that he was virtually unable to sell any

more of them, and he has told me within five weeks that he had nearly one-half of the bonds that he then negotiated, on hand and unsold.

Mr. PICKLE: We further object to the answer for the additional reason that it is purely hear-say.

COMMISSIONER: I think that is relevant.

The further taking of this deposition was adjourned until 9:30 o'clock a. m. Tuesday Dec. 9, 1902.

1060 TUESDAY MORNING, *December* 9, 1902—9.30 a. m.

The further redirect examination of WILLIAM WHEELER resumed:

Q. Mr. Wheeler have you extended your analysis of the properties of the Knoxville Water Company from the 31st of March, 1901, to a subsequent date, and if so to what date?

A. I have, to March 31st, 1902, and also to September 30th, 1902.

Q. What was your reason for concluding it to September 30th, 1902?

A. Because the returns made by the Superintendent to me of extensions, additions to the plant and also changes therein are made as of quarters, each quarter of our fiscal year, and that fiscal year begins April the 1st in each year.

Q. In making this extended analysis did you follow the same plan that you adopted in making your original analysis?

A. I have done so.

Q. Did you vary from the original plan in any respect?

A. No I have not. Perhaps I may say I have added one feature—that is one item which I had not included in the original analysis.

Q. What was that item?

A. That is an item of "construction supplies" carried in stock which will appear in the analysis.

Q. Would that appearing as construction supplies carried in stock have been a legitimate item to have been included in the original analysis?

A. It would in my judgment. It was not included in my original analysis because of an over-sight in not being brought to my attention. It is not in my record of "Works Constructed"
1061 (that is the nature of the records I keep), and the supplies had not been brought to my attention.

Q. Have you treated that item as covering the entire period of the life of the Company to this time, or only to the time of your analysis?

A. I have used it merely as an item brought into the analysis during the last year only.

Q. I will ask you to give the extension of the analysis about which I have been inquiring, to the stenographer to be incorporated herein?

A. It is as follows:

1062 Knoxville Water Company.

Additions Made to the Fair Construction Cost of the Real Estate and Plant and to the Fair Invested Values Therein Contained, Made Since the Passage of the Ordinance of March 30th, 1901.

XI.

Additions Made During the Year Ending M'ch 31st, 1902.

(Approximate Only and Incomplete.)

1. Real estate:

Land extending from the Pumping station easterly to Cardwell Street and lying between Front Street and the River purchased of Strong and Epps, for.....		$3850.00
Land extending from the pumping station westerly about 100 ft. to land of Rush Strong, and lying between Front Street and the river, purchased of M. D. Arnold, in exchange for land between Craig and Front Streets 50 ft. in width adjoining said Arnold for which the Company received.....		500.00
Net addition to real estate, year ending M'ch 31 1902, (No percentage added).....		$3350.00

2. Plant and improvements at river station:

E. (*b*) Addition to coal shed and pocket, est.	$250.00	
H. Grading, planting and drainage of easterly side of lot and of Strong and Epps addition thereto, estimated at.....	500.00	
	$750.00	
Add for engineering, contract allowances etc. 20%	150.00	
		$900.00

3. Reservoir: Nothing accounted.

4. Distribution pipes and appurtenances, including North and West Knoxville (pipe accounted for at $25.00 per ton of 2000 lbs.):

12" C. I. 7546.1 ft. at $1.29.....		$9,734.47
10" " 348.8 " 1.02.....		355.78
8" " 3578.5 " .79.....		2,827.02
Brought forward		$12,917.27

1063

Brought forward	$12,917.27
6" C. I. 9,957.6 ft. at 58.....	5,775.41
4" " 1,025.4 " 41.....	420.41
3" " 2,103.5 " 33.....	694.16
2" W. I. 78.0 " 24.....	18.72

Rock work on 24,637.9 ft. at .01 cu. yds. 246.38 cu. yds. at $1.75	421.17	
Replacing macadam, 12,280 ft. at 6c.	736.80	
Furnishing, setting and connecting 4 fire hydrants complete, at $37	148.00	
Furnishing and setting valve- and stop cocks:		
6 12″ valves at $39.50	237.00	
6 8″ " 21.50	86.00	
18 6″ " 13.00	224.00	
7 4″ " 8.75	61.25	
7 3″ " 6.50	45.50	
1 1″ stop cock at 3.00	3.00	
1 1½″ " " " 2.40	2.40	
44 valve boxes at 3.00 (set)	132.00	
	$21,943.09	
Add 20% for engineering, contractor's allowances and interest	4,388.62	
		$26,331.71
Less net credits for pipe, etc., taken up (old pipe accounted for as stated under II):		
10″ 326.2 ft. at $.54	176.15	
6″ 382.4 " .25	95.60	
4″ 4105.2 " .15	615.78	
1½″ (W. I.) 2,955.0 ft. (No value).		
Brought f'w'd	$887.53	$26,331.71
1064		
Brought forward	$887.53	$26,331.71
1¼″ W. I. 172.3 ft. (No value).		
1 in. " 237.7 ft. "		
¾″ " 837.3 " "		
13 fire hydrants (2 and 3 nozzles) at $27.00	351.00	
7 fire hydrants (1 nozzle at 20)	140.00	
Valves and stop cocks:		
1 14″ valve	54.00	
1 8″ "	20.00	
1 6″ "	11.50	
2 4″ " at $8.00	16.00	
3 2″ stop cocks at 2.50	7.50	

2 1″ stop cocks at 1.00	2.00	
2 ¾″ " " .60	1.20	
12 valve boxes at 2.50	30.00	
Total credits		$1,520.73
Net amount, distribution pipes etc. 1 year to March 31st. 1902		24,810.98
5. Service pipes and appurtenances:		
223 services, applied for April to July 1st. laid free of expense to consumer, at $8.00		1,784.00
188 applied for July 1st. to March 31st. 1902 at $8.00	1,504.00	
Credit by receipts at $5.00	940.00	
		564.00
		$2,348.00
Add 20%		469.60
		$2,817.60
1065 6. Meters, boxes, and connections:		
990 meters of ½″ and ⅝″ sizes, with connections, at $10.50		$10,395.00
1 meter ¾″ with connections, at 10.50		15.75
5 " 1″ " 21.00		105.00
2 " 1½″ " 41.50		83.00
4 " 2″ " 62.00		248.00
1 " 3″ "		140.00
2 " 4″ " 250.00		500.00
1 " 6″ "		650.00
1006 meter boxes and setting same, 8.00		8,048.00
		$20,184.75
Add 20%		4,036.95
		$24,221.70
7. Tools, teams, vehicles, furniture, etc., about		350.00

8. North Knoxville, merged into general distribution.
9. High service pumping station and Filter plant.

Second Extension of Settling Basin.

763 cu. yds. excavation and regrading at .25	$188.25
168 " Portland Cement Concrete in walls and buttresses, complete at 7.00	1176.00
480 sq. yds. Portland Cement plastering two coats complete, at .75	360.00
Lumber for frames, forms etc. per cu. yd. of concrete, at .80	134.40

560 ft. of drainage, channels, incl, plank covers, weights, etc. at .60	336.00	
245 sq. yds. Portland Cement concrete floor 6″ thick, at 1.60	392.00	
10 M Brick laid in Portland Cement complete at $18.00	180.00	
Carried over	$2766.65	
1066		
Carried over	$2766.65	
30 ft. 6″ drain pipe with 8 channel connections with 7 sump-holes	40.00	
7 ft. 8″ drain pipe and gate	30.00	
30 ft. 12″ sewer and connection with old man-hole	75.00	
1 new man-hole and cover complete	30.00	
Cutting openings between old basin and first and second additions, rebuilding deflecting walls in old basin and first addition thereto, handling water during construction of second addition, providing stop-planks, iron-works, etc.	200.00	
	$3141.65	
Add 20%	628.33	
		$3769.98

10. *Standpipe.* Nothing accounted.

(Raised in 1902 20 ft. on new sub-structure, designed in 1901

Original estimate of cost Apr. 28, 1902	$4224.40
Add for 1600 lbs. steel rods at 4¢ gross	64.00
	$4308.40)

11 to 17. *Lonsdale Beaumont Plant.* Merged into the general plant.

18. *Construction supplies, carried in stock.*

On hand M'ch 31, 1902 (per memorandum furnished by Supt. and Treasurer, and not including operating supplies)	$13,265.75

(NOTE.—The amount of construction supplies in stock M'ch 31, 1901, per memo. of Supt. and Treasurer, was $9,221.87, which should have been added to the Fair Construction Cost and Invested Values as of that date.)

1067 XII.

Additions Made During Six Months Ending Sept. 30th, 1902.

(Approximate Only and Incomplete.)

1. Real estate: Nothing accounted.
2. Plant and Improvements at River station; Nothing accounted.
3. Reservoir; Nothing accounted.
4. Distribution Pipes and Appurtenances; Including North and West Knoxville.

(Pipe accounted at $28. per 2000 lbs. f. o. b. Knoxville, except for 3" which is accounted at $32.00.)

10" C. I. 3670.9 ft. at $1.11	$4,074.70	
8" " 2955.2 " .86	2,541.47	
6" " 5280.6 " .63	3,326.78	
4" " 2359.8 " .44	1,038.31	
3" " 4311.2 " .39	1,681.37	
Rock-work on 18577.7 ft. at .01 cu. yds. 185.78 cu. yds. at 1.75	325.12	
Replacing macadam, 9,289 ft. at 6c.	557.34	
Furnishing and setting valves, etc.:		
3 10" valves at $30.50	91.50	
3 8" " 21.50	64.50	
10 6" " 13.00	130.00	
5 4" " 8.75	43.75	
10 3" " 6.50	65.00	
31 valve boxes set at $3.00	93.00	
	$14,032.84	
Add 20% for engineering, contractor's allowances and interest	2,806.57	
		$16,839.41

Less net credits for pipe, etc. taken up.

1068 Forward		$16,839.41
(Old pipe accounted for as stated under II:)		
2" (W. I.) 11.5 ft. (No value).		
1½" " 50.0 " "		
1" " 127.0 " "		
¾" " 262.0 " "		
2 ¾" stop cocks at 60 cts.	1.20	
2 stop cock boxes at 2.50	5.00	
Total credits		6.20
Net amount, distribution pipes, etc. 6 months April 1st. to Sept. 30th. 1902		$16,833.21

1069 5. Service pipes and appurtenances:

211 added April 1st. to Sept. 30, at $8..	$1688.00	
Credit by receipts, $5.....	1055.00	
	$633.00	
Add 20%	126.50	
		$759.50

6. Meter boxes and connections:

116 meters of ½" & ⅝" sizes with connections at $10.50.....	$1218.00	
4 meters ¾" with connections at $15.75	63.00	
2 " 1½" " " 41.50	83.00	
2 " 4" " " 250.00	500.00	
2 " 6" " " 650.00	1300.00	
126 meter boxes and setting same at $8..	1008.00	
	$4172.00	
Add 20%	834.40	
		$5006.40

7. Tools, Teams, Vehicles, Furniture, etc. Nothing accounted.
8. North Knoxville. In General Distribution.
9. High service pumping station and filter plant. Nothing accounted.

10. Stand pipe:

Raising standpipe 20 ft. higher upon new masonry substructure, original estimate of cost, including engineering, contractor's allowances, etc.....	$4244.40	
Add for 1600 lbs. steel rods at 4c. gross..	64.00	
		$4308.40

11 to 17. Lonsdale Beaumont Plant. In general plant.
18. Construction supplies, in stock; Nothing additional accounted.

1070 *Summary to Sept. 30th,* 1902.

Total to March 31, 1901..... $711,379.51

Additions to March 31, 1902.

1. Real Estate	$3,350.00
2. Plant and Improvements at River Station	900.00
4. Distribution Pipes and Appurtenances	24,810.98
5. Service Pipes and Appurtenances...	2,817.60
6. Meters, Boxes and Connections.....	24,221.70

7. Tools, Teams, Furniture &c.....	350.00	
9. High Service Pumping Station and Filter Plant, Second Extension of settling basin	3,769.98	
18. Construction supplies, on hand....	13,265.75	
		$73,486.01
Total to March 31, 1902.....		$784,865.52

Additions 6 Mos. to Sept. 30, 1902.

4. Distribution Pipes and Appurtenances	$16,833.21	
5. Service Pipes and appurtenances....	759.50	
6. Meters, boxes and connections.....	5,006.40	
10. Standpipe	4,308.40	
		$26,907.51
Total to Sept. 30th, 1902.....		$811,773.03
1071 Amount of Initial Construction Cost to March 31, 1902		$784,865.52
Add for administration, contingencies, &c. 5%, and for the costs and the arrears of income incurred in developing the business,—in creating the "going concern," 15%,—equals 20% (See p. 107, also 123, 125 of this deposition).....		$156,973.10
		$941,838.62

To this should be added the "accretion" of interest brought down to M'ch 31, 1902 on the cost of those parts which had been replaced or discontinued prior to that time. Disregarding now such additional items as have been replaced or discontinued since March 31, 1901, the accretion of interest during one year to March 31, 1902 on those said parts which had previously been discontinued was as follows:—

Accretion to M'ch 31, 1901 (Col. 4, p. 166-H) also pp. 127 and 180).....	$11,028.64	
Additional, 1 yr. to M'ch 31 at 6%....	661.72	
Add interest on cost of said parts (Footing of Col. 3 p. 166-H) to wit; on $95,987.04, 1 yr. at 6%.....	5,759.22	
		$17,449.58
Making a total cash sum of.....		$959,288.20

Which the Water Company was then fairly entitled upon the basis of my analysis to raise upon, or to fund in its interest bearing obligations.

Assuming as heretofore (p. 181) such securities to be negotiated

to yield an average of 90 per cent. net of their face value, it would have required and justified the issue thereof to the amount of

$\frac{\$959,288.20}{.90}$ equals $1,065,875.78

Dealing with the initial construction cost of Sept. 30, 1902 in like manner, we have the following:—

1072	Brought over, total initial construction, to September 30, 1902	$811,773.03
	Add for administration, contingencies, etc. 5% and for the costs, and the arrears of income incurred in developing the business,—in creating the "going concern," 15%, equals 20% (See page 107, also 123-125 of this deposition)	162,354.61
	Total cost of physical plant and property....	$974,127.64

To this should be added the "accretion" of interest brought down to Sep. 30, 1902 on the cost of those parts which had been replaced or discontinued prior to that time. Disregarding now such additional items as have been replaced or discontinued since M'ch 31, 1901, the accretion of interest during 18 months thereafter to Sept. 30, 1902 on those parts that had previously been discontinued, was as follows:

Accretion to Mc'h 31, 1901 (col. 4 p. 166-H, also pp. 127 and 180).....	$11,028.64	
Additional, 18 mos. to Sep. 30, 1902 6% comp.	1,012.43	
Add interest on cost of said parts, (Footing of Col. 3 p. 166-H) towit, on $95,-987.04 at same time and rate.....	8,811.61	
		$20,852.68
Making a total cash sum of.....		$994,980.32

Which the Water Company was then fairly entitled, upon the basis of my analysis to raise upon, or to fund in its interest bearing securities.

Assuming as before (p. 181) that such securities be negotiated to yield an average of 90 per cent. net of their face value, it would have required and justified the issue of such securities to the amount of

$\frac{\$994,980.32}{.90}$ $1,105,533.69

1073 Q. In order to a clearer understanding upon the part of those less expert than yourself in these matters, I will ask you to state in figures the net result of the extension of the analysis?

A. The extension of the analysis to March 31st, 1902, shows the total initial construction cost to that date to have been $784,865.52, which total however, includes the additional item of construction supplies on hand at that time, $13,265.75. Those figures were furnished by the Superintendent and Treasurer to me. Including them, the total which I first named indicates an addition to the plant during the year which had then elapsed of $73,486.01. The total initial cost of construction to September 30th 1902, including the same item for construction supplies on hand was $811,773.03, the additional construction during the last six months having been $26,907.51, as set out in detail in the notes which I handed the stenographer. Now taking the total initial construction cost to September 30th 1902, to-wit: $811,773.03, I have affected it by the addition for administration, contingencies &c. 5% and for the cost and arrears of income incident to developing the business, making the element of value which I call the "going concern" 15%, making total addition of 20%, which equals $162,354.61, making the total cost of the physical plant and property up to September 30th 1902, $974,127.64. This is comparable with the sum of $853,655.41 as of March 31, 1901, and set out on page "180" of my deposition. To this I have added the accretion of interest on the cost of parts of the plant that had been discontinued and replaced, disregarding however (for lack of time to deal with that) such minor displacements as have been made during the last year and a half, which accretions

1074 of interest were increased during the last year and a half from $11,028.64 as of March 31, 1901 to $20,852.68 as of September 30, 1902, making the total cash amount, which on the basis of my assumptions and analysis the company was then fairly entitled to raise or to fund upon its interest bearing obligations $994,980.32. That includes, as did the corresponding amount as of March 31, 1901 the original investment in those parts of the plant which had been discontinued or replaced, also depreciation on the parts remaining in use, none of which had been yet refunded to the investor or provided for in a depreciation account, or sinking fund, and which therefore necessarily remained in capital account. That amount, $994,980.32 corresponds to the sum of $864,684.05 as of March 31, 1901 found near the top of page "181" of my deposition. Now upon the further assumption that 90% of their face value was, under the conditions existing from time to time, a fair ratio of their par value to be yielded by such securities to the company in cash, the amount of such securities that the company would have been required or entitled to issue to yield said sum, would be found by dividing that sum by 90/100 which equals $1,105,533.69. This last named sum corresponds to the sum of $960,760.06 as of March 31, 1901, found on page "181" of my deposition.

Q. State the result of your extension of the depreciation account to September 30th, 1902 from March 31, 1901?

A. The extension of the depreciation analysis from March 31,

1901 to September 30th, 1902 results in an increase of depreciation accruing to that time from $184,742.19 to $219,571.95 as set out in detail in two pages of notes which I hand the stenographer which are as follows:—

1075 *Depreciation Accrued to Sept. 30, 1902.*

X. To March 31, 1902.

1. Additional accumulation of:

(*a*) Depreciation fund or of percentages allowances:
(*b*) Annual depreciation on balance of plant in use March 31, 1901;
(*c*) Accretion of interest on discontinued or replaced portions; and
(*d*) On additional cost of service pipes to be maintained after that date.

Construction cost of plant to March 31, 1901		$711,379.51
(*a*) Accumulation of Depreciation fund or of percentage allowances assumed to be invested at 4½% (footing of Col. 6, p. 166–H) 77,726.51, 1 year to March 31, 1902 at 4½% =		81,224.20
(*b*) Annual depreciation on balance of plant in use March 31, 1901, to wit: 2% on (footing of Col. 2 less footing of col. 3) $615,392.47 =		12,307.85
Accrued to March 31, 1902 on plant in use		$93,532.05
(*c*) Accretion of interest on discontinued or replaced portions (footing of Col. 3 p 166–H) 1 year to March 31, 1902 at 6% = 1.06 x $95,987.04 =	$101,746.26	
Interest on accretion of March 31, 1901, footing of Col. 4 p. 166–H) $11,028.64, 1 year to March 31, 1902 at 6%	11,690.36	
		$113,436.62
Amount March 31, 1902 (comparable with footing of Col. 7- p. 166–H)		$206,968.67
(*d*) On additional cost of service pipes to be maintained after March 31, 1901 (p. 185) to wit: 2% on $32,830.00		656.60
1076 Total as of March 31, 1902		$207,624.27
Making an increase of accrued depreciation during the year of		22,882.08

XI. To September 30, 1902.

(*a*) Accumulation of depreciation percentage allowances on plant in use as of M'ch 31, 1902, as above. $93,532.05, 6 mos. to Sept 30th at 4½%.....		$95,636.52
(*b*) Annual depreciation on balance of plant in use M'ch 31, 1901.....	$615,392.47	
Plus do. on additional construction to M'ch 31, 1902, less "Construction supplies"....	60,220.26	
At 2%, equals 1%, for 6 mos. on.....	$675,612.73	6,756.13
Accrued to Sept. 30, 1902 on plant in use.....		$102,392.65
(*c*) Accretion of interest on discontinued or replaced portions, and on the accretions thereon of M'ch 31, 1902, 6 mos. to Sept. 30, 1902 at 6 % = 1.03 x $113,436.62 =.....		$116,839.72
(*d*) On additional cost of service pipes to be maintained after M'ch 31, 1901, to wit: at 2% per year, equals 1% on $32,830.00 plus $1,128.00 or $33,958.00 =...		339.58
Total, as of September 30, 1902.....		$219,571.95
Making the increase of accrued depreciation during the six months.....		$11,947.68
Which is equivalent to an annual increase of.....		$23,895.36

1077 —. For the depreciation of that portion of the physical plant remaining in use at that time, I have used the average rate of 2% per annum, to which (as I have testified) my analysis and conclusions brought me as within the fair and average allowance for depreciation after March 31, 1901, and the total amount which I state $219,571.95 includes the accretion at six per cent. upon that part of the capital which was invested and still remains invested in those portions of the plant that had become disused prior to March 31, 1901, and the accumulation at 4½% upon such portions of the depreciation account or fund (which is in the nature of a deficiency as I have stated that had accrued), to offset depreciation upon portions of the plant then remaining in use. I may call attention here that the annual increment of the depreciation account, or the addition to it under the first year of the additional period, that is to say, from March 31, 1901 to March 31, 1902 was $22,882.08 and the corresponding addition for the six months from March 31, 1902 to September 30th, 1902, was $11,947.68, which is equivalent to an annual increase of $23,895.36. Those sums, if the grounds of my reasoning and analysis are correct and sound, represent the additional burden laid upon rates during each of those periods by reason of depreciation alone, and the growing accumulations upon the past depreciation which has yet to be provided for, and those additional burdens so laid upon rates do not include interest upon the additional capital invested in the plant during that period.

Q. Has any provision ever been made for depreciation?

A. Up to the time of this inquiry, March 31, 1902, as I have already testified, no provision had been made, except by the investment of certain net earnings in the construction account. Since
1078 that time I think some additional charges have been made on the books on that account, but the amount of those the Treasurer would have to state. The effect of them would be determined not to the extent of the face amounts of such sums as may have been carried to a depreciation account until deduction was made for the deficiency in earnings to afford a fair return upon the fair invested values to which I have testified, which as I have already stated are very substantially in excess of the actual amount of the interest bearing obligations of the company that were outstanding as of the dates of such transfers to depreciation account.

Q. Looking to certain items in the extension of the analysis I note that the company has purchased real estate from Epps and Strong extending from the pumping station eastwardly to Cardwell Street; for what purpose was the purchase made?

A. That was the piece of land lying next to the eastward or up the stream from the company's pumping station. The company's land extended only just far enough to receive the tool shed which the company had there, and for access to its land it had a right of way over the adjoining land of Epps and Strong. The reasons for purchasing this land were three-fold: First Epps and Strong insisted just prior to the time when this land was purchased that the company should provide for itself structurally a new road-way for its access to its pumping station property over their land, and that would have involved considerable expense, as the new position pointed out by them was upon a steep slope just below Front street upon which the property abuts. The company also a few years ago was required by the United States War Department to discontinue the dumping
1079 of its ashes upon its own land against the river, where they would be carried away in high water, and thereafter was obliged to have its ashes hauled away at a substantial expense. The bank of the company's property was also subject to scour, being on the outside of the stream during freshet stages, and it had already protected the bank upon its previous holding of land by grading and sowing bermuda grass to provide a turf to protect it. In order to provide a right of way for itself over this land, to secure additional land for dumping its ashes and to prevent the scour of the river bank, (a menace to its pumping station) this land was purchased from Epps and Strong at the price mentioned in my analysis. This land extends, as I now recollect about 500 to 600 feet along the river and along Front street east of the pumping station property.

Q. Is there any other way of reasonably convenient access to the pumping station for vehicles except over this land?

A. There is no way whatever that vehicles can reach the premises except over this land.

Q. I see also an item of real estate purchased from M. D. Arnold, extending westerly about 100 feet in exchange for land on Craig street. State the reasons for the exchange?

A. This is an exchange of land for which the company received a

sum in cash in addition to the land that it received from Mr. Arnold for land on Craig street which Mr. Arnold desired to acquire in order to extend his own grounds about his residence. The land which Mr. Arnold desired was a part of our yard, in which we stored supplies, which I think the Master saw when we took a view of the premises, and which was less intimately related to the pumping station than the land acquired of Mr. Arnold, which was the land next
1080 west of the pumping station between the river and Front street. This exchange brought to the company the difference of $500.00 which I have therefore deducted from the real estate investment.

Q. I notice various pipe extensions; state generally please for what purposes they were made?

A. These extensions are incident to the extension of the business, and to some extent to the increase of the supplying capacity of the pipes due to the larger demands of the service. They are precisely in kind and purposes like the changes and additions which are contained in the first part of my analysis prior to March 31, 1901.

Q. The only other item which I desire to ask about in the extension of the analysis is the raising of the Standpipe. Please explain why the standpipe was raised, and what benefits were received by the company and the public?

A. The standpipe was raised during the six months between March the 31st. and September the 30th, 1902. It was raised to an additional height of 20 feet upon a new masonry sub-structure. The primary object of raising it, was to put it at a sufficient height from which the high service supply could and would flow out of it into the West Knoxville standpipe and into the adjacent high service territory without necessitating direct pumping from our high service pumping machinery into the West Knoxville standpipe, at a great loss of power by friction in forcing all the water, during the few hours of pumping, through that long line of main pipe. The effect has been, and is to reduce by about one-half the cost of our high service pumping; for now the pressure against which the high service pumps operates is that due to the height of the water in the standpipe close at hand, whereas before, in order to carry a
1081 sufficient supply to the West Knoxville standpipe, we had to close the East Knoxville standpipe entirely and force the water directly through the intervening lines of mains between three and four miles in length at a great loss of head by friction through the pipes so that the actual head, or pressure, under which the pumps then had to operate was more than double what it has to operate against in pumping into the East Knoxville standpipe. It has resulted, in addition to a saving in coal, also in the reduction of the hours of pumping—that is the pumps can operate very much faster under this lower pressure than they could under the higher pressure required in filling the West Knoxville standpipe directly.

Q. In raising the standpipe, state whether that would affect the efficiency of the service to any extent?

A. It does also affect the efficiency of the service. It might not be perceptible in ordinary domestic service, but in case of fire it yields

so much additional pressure; that is to say, 20 feet of additional head; and in that connection the use of two standpipes upon opposite sides of the district supplied by them affords nearly double the amount of water that could be drawn in case of fire under a given pressure, than could be afforded by one standpipe only. Of course they also carry a larger volume in store in case there was a call for fire protection at a time when the pump was not operating.

Q. Mr. Wheeler, what has been the nature and extent of your services to this company in a professional or expert capacity, either as supervising, designing or consulting engineer?

A. Well it devolves upon the Supervising Engineer to make or direct the compilation of all data regarding the construction
1082 of the plant, the direction and the making of the plans for extensions and improvements of the plant; the tabulation of data referring to operation; looking to the development of economies or saving in operation; all the plans and specifications or instructions governing construction are made by me or at my office in Boston, and contracts for the more important parts of the work or additions to the plant are usually made by me. Of course current pipe extensions, which are very much matters of routine negotiation, do not call for particular plans or contracts for supplies on my part.

Q. Your services then generally have been of the nature you have indicated?

A. They have.

Q. In your analysis you have classified certain pipe in North Knoxville at $25.00 a ton. Does that include the pipe previously laid in North Knoxville, and if so, was the price of such previously laid pipe greater or less than $25.00 when it was purchased?

A. In my analysis, for convenience, I treated all of the pipe in North Knoxville at the end of the year 1891 as having been laid during that year, for the reason that it was tabulated and classified in my records all in one list. As a matter of fact certain portions of it were laid by the old company in North Knoxville prior to the acquirement of the property by the present owners. Such portions of it as were laid prior to that time must have cost more than the pipe laid at that time, for the cost of pipe during previous years was substantially higher than in 1891. All of that pipe however I have estimated as costing $25.00 per ton, which I consider a fair price for pipe during that year.

Q. In order to correct any possible misapprehension I read you question from page "265" of your cross examination as fol-
1083 lows: "Mr. Wheeler, on page 29 of the record, taking an item at random I find this item under head of 'pumping machinery and appurtenances. Davidson single, direct acting air pump condensers, each having 8″ steam and 12″ water or vacuum cylinders, with 14″ stroke, also one Davidson feed pump, 5½″ steam cylinders, 3½″ water cylinder and 8″ stroke, estimated cost f. o. b. cars Knoxville, $10,000.00.' I will ask you if you know what was the actual cost of this machinery"? What I wish now to ask you is whether or not the cost of $10,000.00 attaches to the items

of machinery enumerated in the question, or applies to other items not enumerated in the question?

A. It applies to other items not enumerated in the question. In fact the principal item to which the sum named refers is found on the preceding page, 28 of my deposition, being "2 Davidson single, compound, direct duplex acting, double plunger engines" &c. The question dealt only with minor parts of the items which were carried over on page 29.

Q. On page 268 and extending to page 269 of your cross examination you are asked as follows: "Now I will ask you Mr. Wheeler if it is not a fact that the taxes of this company were paid by the City for several years after the inception of the operation of this company" I will ask you to state, setting forth first the sources of your information so that the Court may determine the competency of your testimony on that point, whether or not as a matter of fact the city did pay the taxes of the Knoxville Water Company at any time?

A. I did not. I am relying upon the record in the Chancery Court in the case of Knoxville Water Company against the Board of Mayor and Aldermen in the suit of 1887, or thereabouts. I find that whereas by its contract with the city the company was in terms exempted from taxes by repayment of the same on account of water service during the first five years of the contract—it paid such taxes under protest and in the suit of 1887 against the city for hydrant rentals it sued also to recover the amounts that had been paid by it for taxes, and in that case I now quote from the record. "The Court being of the opinion that complainant has no right to recover the taxes paid it sued for in the bill, is pleased to so decree." See page "565, Record "Q" Chancery Court, Knox County.

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Q. To what extent does the Knoxville Water Company furnish water free of charge in the old city of Knoxville? Please state the items if you can, also the value of the free services which they are not charged for?

A. Under the original contract between the water company and the city made in 1882, the city is allowed to use water free of charge from not exceeding two hydrants at a time for flushing sewers and gutters, also for the City Hall, also for sprinkling the streets. With the assistance of the Superintendent I have made an estimate of the value of the water service so rendered to the city without charge. The estimated use of water for flushing gutters is from 30,000 to 40,000 gallons a day. The flushing gang working at flushing gutters and sewers about three hundred days per year, three hours per day at 250 gallons a minute would use an average of about 37,000 gallons daily throughout the entire year of 365 days. In addition to this amount 30 automatic flushing tanks are in use within the old city limits for flushing the sewers. These flushing tanks use an average of about 300 gallons each per day, which would amount to between 10,000 and 12,000 gallons for all of them daily. Adding this to the amount used for flushing gutters through the hose would make a total for flushing of about 45,000 gal-

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lons per day, which at ten cents a thousand gallons would amount to $1,642.50 per annum. I estimate the value of the service at the City Hall at $75.00. In sprinkling the street about three sprinkling carts are ordinarily used. They hold about 600 gallons each, are used about 12 hours daily, 25 days per month for about seven months, and on an average of 20 loads each per day, that service at 10 cents a thousand gallons would amount to about $630 a year, making the total estimated value of the free water service within the old city limits $2,347.50 a year. Outside of this the company actually furnishes water for public drinking fountains without charge.

Q. What would that amount of $2,347.50 capitalized at six per cent. amount to?

A. Capitalized at six per cent. it would amount to $39,125.00 as the capital value of that service. If capitalized at any lower rate of interest, it would represent a correspondingly larger amount.

Q. Please state the free services in West Knoxville?

A. Under the Lonsdale-Beaumont contract with the Town of West Knoxville made in 1892, free water is allowed for flushing gutters and sewers to be used from one hydrant at a time six hours a week during the first five years, eight hours during the second five years, and ten hours weekly thereafter during the remainder of the contract which was made for 20 years, or an equal amount could be used through flushing tanks; also for the West Knoxville corporation schools of which there were two in 1893, and are I am advised two now; also for public buildings used for town pur-
1086 poses, under which head I am advised there is one Fire Department building and also two drinking fountains for man and beast. This free water service, under the terms of the contract, was to be in lieu of taxes during the first five years of that contract, and thereafter was to be rendered without charge and the company to pay its taxes. My estimate of the value of that service is as follows: For flushing gutters and sewers, any one hydrant hose stream eight hours per week at 250 gallons per minute would be equal to 120,000 gallons a week, which at the lowest meter rate under the West Knoxville schedule 13 cents per thousand gallons would equal $15.60 per week or annually $811.20. For the two schools I estimate one of them at $30.00 and the other at $15.00 equals $45.00. For the Fire Department building $25.00, and for two water troughs at $12.00 equals $24.00; for an ornamental fountain and for churches, water of which is granted free, I have accounted nothing. I am not advised as to the use under those heads. The annual total of the amounts I have estimated at $905.20. If this amount were capitalized at six per cent., it would represent $15,086.00.

Q. Please state the free services in North Knoxville?

A. In North Knoxville, under the contract franchise granted to Wheeler & Parks, there was allowed in lieu of taxes during the first five years and thereafter free the following water service: Water for flushing and washing gutters and sewers; water for one ornamental fountain, for one drinking trough for man and beast and for schools—I am not quite certain about Churches. The estimated

value of that service I make as follows: Water for flushing and washing gutters and sewers, one hydrant, one hour per week, per mile of street main, which for about seven miles of pipe at
1087 250 gallons per minute would permit the use of 15,000 gallons per day, which at 10 cents per thousand gallons would equal $1.50 per day or annually $547.50. For one ornamental fountain 5,000 gallons daily, I have not accounted anything, for I am not quite clear yet whether that is availed of or not. For one drinking trough for man and beast, I have allowed for one under the terms of the contract but I understand that two are actually being supplied. For schools, I have made no allowance, as I am not advised on that point at present. The total annual value of the service which I have allowed and estimated for is $559.50. This sum capitalized at six per cent. would equal $9,325.00.

Q. Turning to the matter of the construction of the North Knoxville plant, I desire that you state more in detail than you have in the former parts of your deposition, the reasons why that plant was constructed by Wheeler & Parks as separate from the Knoxville Water Works, and not by the Knoxville Water Company itself?

A. Well in the first place the water furnished by the Knoxville Water Company at that time was unfiltered, and for that reason it was not satisfactory, or would not have been acceptable to the town of North Knoxville in providing for its new water supply. The Knoxville Water Company was at that time unprepared to deal with the question of filtration it did not deem it wise to deal with it in part by undertaking to supply an outlying municipality without doing so in its entirety for the supply of the whole community which it served. It was moreover prevented from dealing with that improvement or any other large improvements by reason of the fact that the contract between the Knoxville Water Company and the city of Knoxville limited the amount of mortgage bonds
1088 which the company could issue upon its plant, and hence it was prevented from financing in an economical manner such improvements of its plant—of the extension thereof—outside the city limits, or even within the city limits for that matter. It was therefore considered desirable, and indeed necessary to procure, if possible a separate ordinance for the supply of North Knoxville under independent control and at that time there was under consideration the possibility of making the company which might be organized ultimately for the ownership of the North Knoxville plant, a parent company, which without limitation or hindrance of the amount of mortgage bonds which it might issue, might eventually acquire or consolidate under its charter and its franchises the Knoxville Water Company, and thereby obviate the obstruction which existed in the contract between the Knoxville Water Company and the city as to the amount of bonds that could be issued under the charter of the company. At that time Wheeler & Parks were also negotiating, or attempting to negotiate for a similar franchise for supplying West Knoxville, but in that they did not succeed. However that is one of the objects they had in view in making an independent movement for supplying North Knoxville in

the hope that eventually it might include also West Knoxville. The contract for North Knoxville as appears therein provided eventually for the filtration of the water supplied to it, if that supply should be taken either from the old company or the Tennessee river direct, and among other efforts made by Wheeler & Parks at that time to lay foundations for an independent company in which might eventually be merged all the service of this vicinity, they applied
for permission to lay a supply main or mains through what
1089 was then the 10th Ward of the city of Knoxville and which
intervened between North Knoxville and the Tennessee River. A part of the object of that application was to afford means for creating a new pumping station on the Tennessee River outside of the city of Knoxville and above the present pumping station, from which water might be brought into North Knoxville after proper clarification at the pumping station, and by means of that supply to furnish North Knoxville or any other territory which the owners of those works might be subsequently empowered to serve. This application however, to lay pipes through the 10th Ward of the old city of Knoxville was refused by the city, and that effort therefore failed. Further efforts were made by Wheeler & Parks, also by the old company to secure the necessary powers to extend the plant and service of the old company, and to raise funds for such improvements and extensions, which efforts are set out in a report made by Wheeler & Parks as Supervising Engineers to the Directors of the Water Company in June, 1893. That report appears in the records of the company which I have here, and it was following that report in the month of September, that the company adopted its by-laws, fixed its capital stock, and took such action as is set out in pages "5 to 21" of the stockholders records, which I think have been incorporated in my deposition, also pages "54 to 56" of the Directors records, which are also copied in this case. There were certain other elements of value in the North Knoxville contract which had a bearing upon the acquirement of that property by the Knoxville Water Company. One was the exemption from taxation, which although in a similar case between the Knoxville Water Company and the city of Knoxville was declared to be invalid, yet that
exemption was respected by the community without contest,
1090 and the owners of the works benefited thereby. The hydrant
rental in North Knoxville was relatively much larger than that paid to the old Water Company in old Knoxville—larger in proportion to population—larger in proportion to the cost of the works. The ratio of hydrant rental to population in North Knoxville was about one dollar annual hydrant rental per capita of population, which was nearly double the rate paid for hydrant service in the City of Knoxville. Then North Knoxville could be supplied from the old water works with very little additional cost for supplying the water—that is to say, without the installation of additional pumping machinery or employment of additional service, except as the quantity served thereby might precipitate or bring nearer the day when larger pumping machinery would have to be installed. The same considerations of economy apply also with respect

to operating the North Knoxville Water plant in conjunction with the Knoxville Water Company's plant, such cost being much less of course than would be necessary if the two plants had been operated separately, or managed by different officers and employés at different offices.

Q. On page "324" of your deposition you were asked whether or not all machinery was paid for after it had been instituted and tested and proved satisfactory." Your answer was: "That as a rule, any construction work is paid for after completion of contract, or after installation of the plant for which the payment is made. That is not always the case, but that is the general rule?" Please state a little more definite what you refer to there, and the intent of your answer?

A. Well that answer is not correct as applied to large improvements, and it is hardly correct as applied to minor ones as a
1091 rule. In the case of the purchase of supplies, which enter into any improvements, such supplies are usually paid for when the order is filled, but the capital invested in those supplies does not begin to yield a return until those supplies are incorporated into the plant—until the last stroke of work entering into that improvement is finished, and the condition of the plant is such that it is ready to earn something; if the works are built as a whole by general contractors, (and the same is true if the works are built by a corporation, subletting them in parts, or buying the supplies and doing the work by day labor), of course current expenses for supplies and day labor have to be met as supplies are received, and the labor to be paid for weekly, or at frequent intervals as it is performed. Payments on account of services rendered are made usually monthly, where the work is done under a general contract, but none of the capital investment in such a property, or in any specific part of the plant, begins to yield a return until the last stroke of work is done which puts the plant into a condition for use. All capital invested prior to that time lies idle until such time it has begun to earn something, and it is for the purpose of affording a fair return upon the capital invested therein during such stages, that I have made the allowance of 3 per cent. in my analysis upon the assumption that such capital would lie idle perhaps six months.

Q. Do you know whether or not at the time of the consolidation of the Lonsdale Beaumont Company with your company, the water supply of the Lonsdale Beaumont Company was sufficient for all the purposes of that company?

A. It was not sufficient. It had already become insuffi-
1092 cient, and the Lonsdale Beaumont Company had been obliged to curtail, to some extent, its supply outside the municipal limits of West Knoxville, in order to enable it to maintain a supply for the town of West Knoxville, or the territory in which it was required to supply water by virtue of its contract.

Q. Do you know of any other corporation doing business in Knox County of approximately the same capitalization and approximately the same interest bearing liabilities of the Knoxville Water Company?

A. Yes, sir, approximately.

Q. Give the name please?

A. I think the name, as given in the record, is the Knoxville Traction Company.

Q. State what information you have upon the subject of the assessment of that company for taxation, and how you acquired that information?

Mr. PICKLE: I object to that as it is wholly irrelevant; second, because there is record evidence about the facts about which he inquires, and it is not competent for the witness to prove the contents of records.

COMMISSIONER: I think that objection should be sustained. If the witness is going to give the figures, it must be the records, and so the answer as to the figures will have to be excluded. The Master rules that the witness can prove this fact by filing proper evidence hereafter, but not by giving testimony, and to this ruling the defendant excepts and appeals to the court. (Exb. 10.)

1093 Q. Mr. Wheeler, were all of the debentures issued before you became interested in this property?

A. All that were issued at all, were issued before I became interested.

Q. When did Wheeler and Parks cease to exist as a firm?

A. February 1st, 1894.

Q. Why were the rates existing in West Knoxville before the consolidation of the Lonsdale Beaumont Company with the Knoxville Water Company, retained after the consolidation?

A. Because they were continued in force as provided under the original contract between West Knoxville and the Lonsdale Beaumont Water Company. The Knoxville Water Company offered to extend the application of the rates provided in the ordinance of 1899, or the rates which were previously used by it, into West Knoxville, but that wasn't agreeable to the City.

Q. You have stated in reference to the compensation allowed Wheeler & Parks as joint Supervising Engineers from the Knoxville Water Company, that there was a certain period during which you were compensated in the amount of $6000.00. State what the period covered by the $6000.00 was, and why the compensation at that time exceeded the amount subsequently allowed you as supervising engineers?

A. The compensation of Wheeler & Parks as Supervising Engineers to which you refer, was established in a vote passed by the directors June 16th, 1892, which provided that "Messrs. Wheeler & Parks be allowed and paid as compensation for their services as Supervising Engineers and in recouping and reorganizing the works of this Company as relates to construction, maintenance and operation thereof and matters pertinent thereto, from December
1094 1, 1890, to June 1st, 1892, at the rate of $6000.00 per annum." That compensation then, according to the terms of that vote was to cover the period of a year and a half following the first acquirement of this property by the owners at that time.

We found that the management of this property had been, putting it mildly, not up to our ideas—not up to what the management should be, and Wheeler & Parks had devoted a great deal of time to reorganizing the management and operation of the plant—they also devoted a great deal of time to the study of questions to which I have just referred, as to how the plant could be extended, and the supply and service be improved. They spent—either one or the other members of the firm—a good deal of time here, and had assistants here nearly all of that time. They spent a great deal of time in endeavoring to make negotiations with the City of Knoxville authorizing the issue of additional bonds to provide funds for making such improvements. I find by referring to the records of that period that they drafted and presented new rules and regulations governing the water service, and the making of connections by plumbers, &c., which were adopted by the company, and appear in these records, and it was, by reason of the services they rendered for the purpose of reorganizing and systematizing the management of the plant, and their efforts toward its further improvements, that this further compensation was voted them.

The further taking of this deposition was adjourned until 2 o'clock P. M. Dec. 9th, 1902.

1095 TUESDAY, *December 9th*, 1902—2 o'clock p. m.

Continuation of redirect examination by Mr. CALDWELL:

Q. Mr. Wheeler, is out-growing capacity a good reason for discontinuing parts, treating their values as going into depreciation, and as being treated as you have treated it here in your depreciation account?

A. I consider it to be so—an imperative reason.

Q. What on additional construction and investment making a total of $1,105,533.69 as of September 30th 1902 would be a proper allowance for interest on the investment values contingent fund, allowances and depreciation on the plant then in use?

A. Pursuing the same basis for a reply to that question, that I used on pages "184,185" in response to a similar question directed to conditions existing as of March 31st, 1901, the total annual allowance, covering interest, depreciation and contingent fund allowances that would have to be provided out of future earnings to meet future charges only on those items would be $89,399.34. This is comparable with the sum of $77,875.43 found in my deposition page "185" relating to March 31st 1901, and now, as then, the sum named does not contemplate or provide anything for refunding, between now and the expiration of the present contract between the Water Company and the City, the arrears of depreciation that had accrued up to September 30th, 1902, and until such arrears are provided for, or repaid, the amount thereof would necessarily continue in capital account.

Q. Mr. Wheeler, I am going to ask you for information, to explain what relation to, or effect upon the $994,980.00 item this sum

you have just mentioned has; in other words, explain what
1096 function it performs in this inquiry?

A. The sum of $994,980.00 represents the primary construction cost of the plant to September 30th, 1902 plus 20 per cent. for administration, contingencies, going concern, &c. plus the accretion of interest down to September 30th, 1902 on capital that was invested in portions of the plant that had served their full life, but that had not been refunded in any way. That sum $994,980, represents then the fair amount of cash which the company was entitled to realize on its interest bearing obligations and to repeat what I said yesterday, if the basis upon which those securities were to be negotiated, be taken at 90 per cent. of their face value, that would require the issue of interest bearing securities to the amount of $1,105,533.69 which sum represents then the amount of securities that would have to be issued, and upon which interest should be charged. To determine the net amount of the invested values in that part of the plant and property upon which depreciation allowances at the annual average rate of 2 per cent. should be accounted from and after September 30th 1902, upon a basis corresponding to that used as of March 31st 1901 (See pp. 184-185 of my deposition) we have the following computation:

(*a*) Initial Construction Cost of physical plant.....		$811,773.03
Less Construction supplies on hand, on which depreciation is not accounted.....		13,265.75
		$798,507.28
Add for Administration, contingencies, legal services and expenses, and the "going concern" 20%		$159,701.45
		$958,208.73
(*b*) Plus additional cost of "service pipes" to be maintained and renewed after March 31, 1901 as stated in the analyses I have already put in, $32,830.90 plus $1128.00=.....		33,958.90
(Carried over)		$992,167.63
1097 (Bro't over)		$992,167.63
From which deduct:		
(*c*) Initial Construction cost of those parts of the physical plant discontinued or replaced to March 31, 1901..	$95,987.04	
And the 20% allowance thereon for administration, "going concern" &c..	19,197.41	
Making a total deduction of.....		$115,184.45
And leaving as the net amount upon which depreciation should be accounted from and after Sept. 30, 1902		$876,983.18

That being the approximate balance which is subject to continuing depreciation that can only be satisfied out of earnings.

Hence the annual amounts of interest, depreciation, and contingent fund allowances that would have to be provided out of future earnings, would be substantially as follows:

Interest on $1,105,533.69 at 6%	$66,332.02
Depreciation on $876,983.18 at 2%	17,539.66
Contingent fund on $1,105,533.69 at ½%	5,527.67
Total, assuming the capital account remains undiminished by refunding the depreciation, or until depreciation shall be refunded	$89,399.35

Q. What was the aggregate value of the stock of the Knoxville Water Company when Wheeler and Parks made their purchase in 1890 as that value is shown by prices paid for, and prices offered for stock by Wheeler & Parks at that time?

1098 A. $105,100.00 as of December 1890, plus interest thereon, or on such portions thereof as may have been, or might have been paid after that date.

Q. I asked you yesterday in regard to the present value of certain parts of the plant, or the cost of duplicating the same, or replacing with materials of the same kind, and for the same purpose. Have you made an estimate of the cost of replacing the entire plant as of the present time?

A. I have; the plant that was in use September 30th 1902.

Q. When was this estimate made?

A. This estimate was begun on the 4th of December at my office in Boston, this month, and was finished to-day.

Q. Is it in type script and properly tabulated for insertion into the record?

A. It is as follows:

1099 Knoxville Water Company.

Estimated Cost of Replacement of the Physical Plant and Property which was in use September 30, 1902, and Omitting all parts and Portions Thereof which had then been Discontinued, Removed, or Replaced.

1. Real estate:

(Estimated at the values stated in my analysis of Fair Invested Values,—supposed to have been at purchase prices, or less.)

Acquired, original, to Dec. 31, 1891...		$11,650.00
" 1 year to M'ch 31, 1893.....	3600.	
Less L. B. lands not used, and rights of way abandoned.....	3000.	
Balance, L. B. Standpipe Lot.....		600.00

Acquired 1 year to M'ch 31, 1900	5,500.00	
" do. do.	4,480.00	
" 1 year to M'ch 31, 1901	192.00	
" 1 year to M'ch 31, 1902, net	3,350.00	
		$25772.00

2. Plant and improvements at river station:

(Except as otherwise stated, present replacement costs are estimated at the relative prices used in analysis of Fair Invested Values,—although present building and construction prices are probably higher.)

A. Engine house and engine pits:

Original construction	$9,730.00	
Less portions removed 94–1900	3,806.34	
		$5,923.66
New Engine Ho. Year ending M'ch 31, '95		9,700.44
Carried over		$15,624.10
1100		
Carried over		$15,624.10
New Intake, year ending M'ch 31, '95		2,622.90
New Engine Ho. " " " 31, '96		7,175.64
Do. " " " 31, 1900		72.00
Do. " " " 31, 1901		3,475.01
		$28,969.65

B. Boiler house:

Original construction	$1,060.44	
Less whole replaced, 1895–'6	1,060.44	
	0,000.00	
New Boiler Ho. year ending M'ch 31, 1896		$2,707.50
Do. " " " 31, 1901		1,281.00
		$3,988.50

C. Tool and storage house:

Original construction	161.40	
Moving do. and new foundations, '96	25.00	
	$186.40	
Less whole replaced M'ch 31, 1901	186.40	
	000.00	
New Tool House, &c. yr. ending M'ch 31, 1901		$314.16

D. Chimney, iron stack:

(Original stack replaced with induced draft plant.)

E. Coal chute and pocket:

(a) Original chute (replaced with coal shed and pocket.)

(*b*) New coal shed and pocket:

Year ending M'ch 31, 1896	$929.76	
Add'l " " " 31, 1900 (wagon scales, &c.)	512.40	
" " " " 31, 1902 (extension)	300.00	
		$1,742.16

1101 F. Store house on Craig St. lot:

(Original house since removed.)

F'. Fencing on Craig St. lot		210.00

G. Pumping machinery and appurtenances:

(*a*) Original Davidson pumping Machinery,
(*b*) Foundations for ditto, and
(*c*) Suction and Discharge Connections for ditto, were replaced and discontinued M'ch 31, 1901.

(*e*) New Deane Vertical Pumping Engine. Year ending M'ch 31, '96	$15,810.00	
(*f*) Foundations for do. Y'r ending M'ch 31, '96	354.12	
(*g*) Suction and Discharge for do. Year ending M'ch 31, '96	1,647.60	
Total, estimated at prices used in analysis of Fair Invested Values, (prices tend upward since then)		$17,811.72
(*h*) Pulsometer Pump, Year ending M'ch 31, '97		258.00
(*i*) Suction Pipe, screen well to engine pit, Year ending M'ch 31, '99		60.00
(*j*) Pipes for flushing screen well, Year ending M'ch 31, 1900		144.00
(*k*) New Worthington triple expansion horizontal pumping engine and appurtenances, erected year ending M'ch 31, 1901	$16,038.00	
(*l*) Foundations for do. yr. ending M'ch 31, '01	360.00	
(*m*) Suction & Disch " " " " 31, '01	1,208.40	
Estimated cost yr. ending M'ch 31, '01	$17,606.40	
Allow for advance since then, 15%	2,640.90	
		$20,247.36

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(*d*–1) Two original boilers and appurtenances—were discontinued and replaced in 1895, *except* one half of the steam and feed water connections, then valued at	$225.00	

(*d*–2) Two additional boilers and appurtenances set in 1889, were discontinued and replaced in 1901, *except* six-tenths of the steam and feed water connections, then valued at..... ..	210.00	
(*d*–3) Two boilers and appurtenances set in 1895, (replacing original boilers) with Hawley furnaces, &c., then valued at $4,788.00 minus $600.00 =.	4,188.00	
(*d*–4) Two boilers (replacing those set in 1889) with Hawley furnaces, induced draft outfit, automatic damper regulator, &c., then valued at.....	7,056.00	
	11,679.00	
Add for advance in prices since then, 10%...	1,167.90	
		$12,846.90

H. Stairway from Front St. walks, grading, drains, seeding, planting, &c.:

Portion done 1901, then valued at.....	$1,094.00	
" " 1902, " " "	600.00	
		$1,694.00

I. Intake tower.

Completed in 1901, then valued at.....	$10,245.00	
1103		
Carried over.....	$10,245.00	
Add for advances since then, 10%.....	1,024.50	
		$11,269.50

3. Reservoir, East Knoxville:

Taken at the original construction estimates, 1883.....	$33,000.00	
Additional, 1889	126.00	
		$33,126.00

4. Distribution pipes and appurtenances:

Cast iron pipe for present replacement, accounted as follows:—

3-in.	pipe	at	1.83c.	per	lb.	f. o. b.	Knoxville = ...	$36.60	per ton.
4-in.	"	"	1.68c.	"	"	"	" ...	33.60	" "
6 & 8	"	"	1.58c.	"	"	"	" ...	31.60	" "
10 to 20	"	"	1.55c.	"	"	"	" ...	31.00	" "
Lead		"	5.25c.	"	"	"	"		

20-in.	C.I. pipe	(165#)	2,723.3 ft.	laid at	$3.37..	$9,177.52
18-in.	" "	(140#)	714.9 "	" "	2.87..	2,051.76
16-in.	" "	(116#)	9,031.2 "	" "	2.38..	21,494.26
14-in.	" "	(95#)	7,607.8 "	" "	1.93..	14,683.05
12-in.	" "	(75#)	41,929.3 "	" "	1.54..	64,571.12
10-in.	" "	(58#)	27,373.9 "	" "	1.21..	33,122.42
8-in.	" "	(43#)	43,748.1 "	" "	.95..	41,560.70

6-in. C. I. pipe (30#)	119,676.7 ft. laid at $0.70..	$83,773.69
4-in. " " (20#)	45,389.1 " " " .50..	22,694.55
3-in. " " (15#)	27,278.7 " " " .43..	11,729.84
Carried over.....		$304,858.91

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Forward.....		$304,858.91
3 ½-in. W. I. pipe	250.8 ft. laid at .46.....	115.37
3-in. " "	489.7 " " " .40.....	195.88
2 ½-in. " "	416.2 " " " .32.....	133.18
2-in. " "	31,034.5 " " " .26.....	8,068.97
1 ½-in. " "	5,618.3 " " " .22.....	1,236.02
1 ¼-in. " "	5,425.0 " " " .19.....	1,030.75
1-in. " "	17,787.2 " " " .16.....	2,845.95
¾-in. " "	7,937.0 " " " .12.....	952.44
½-in. " "	1,517.3 " " " .10.....	151.73
Rock work on 395,949.0 lineal feet of pipe at .01 cu. yd. per foot = 3,959.5 cu. yds. at $1.75.....		6,929.13
Replacing macadam on streets (Covering all of cast iron mains except those laid in brick paved streets, and allowing for no macadam on wrought iron pipe although there is some in fact) say 309,000 lin. ft. at $ .06.....		18,540.00
Replacing paving, on 16,473 lin. ft. at .60.....		9,883.80
Furnishing, setting and connecting 250 fire hydrants at $37.00.....		9,250.00

Furnishing and setting pipe valves and stop-cocks:

9 20-in. valves at	130.00.....	1,170.00
1 18-in. " "	102.00.....	102.00
16 16-in. " "	70.00.....	1,120.00
13 14-in. " "	58.00.....	754.00
37 12-in. " "	39.50.....	1,461.50
31 10-in. " "	30.50.....	945.50
		369,745.13

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Forward		$369,745.13
69 8-in. valves at	21.50.....	1,483.50
212 6-in. " "	13.00.....	2,756.00
95 4-in. " "	8.75.....	831.25
100 3-in. " "	6.50.....	650.00
1 2½-in. Stop-cock at	4.00.....	4.00
58 2-in. " "	3.00.....	174.00
11 1½ in. " "	2.40.....	26.40
15 1¼ in. " "	1.75.....	26.25
34 1 in. " "	1.20.....	40.80
20 1 in. " "	.75.....	15.00
3 ¾-in. " "	.55.....	1.65
725 valve boxes, set "	3.00.....	2,175.00

Sundry appurtenances:

1 16-in. check valve	185.00	
1 10-in. " "	60.00	
2 brick chambers with covers for same at 20.00	40.00	
3 1½-in. auto. air valves on force main at 15.00	45.00	
3 brick chambers with covers for do. at 20.00	60.00	
Furnishing and setting pipe bridge at Clinch Ave. east	725.00	
	$379,043.98	
Add for engineering, contractor's allowances, etc., 20%	75,808.80	
		$454,852.78

1106 5. Service pipes and appurtenances:

Total number laid and in use, comprising 420 in paved streets at $22.00	$9,240.00	
And 4522 in unpaved streets at $8.00	36,176.00	
	$45,416.00	
Add 20%	9,083.20	
		$54,499.20

6. Meters, boxes and connections:

1286	meters	½ & ⅝-in.	and	conns.	at	$10.50	$13,503.00
52	"	¾-in.	"	"	"	15.75	819.00
21	"	1-in.	"	"	"	21.00	441.00
19	"	1½-in.	"	"	"	41.50	788.50
19	"	2-in.	"	"	"	62.00	1,178.00
1	"	3-in.	"	"	"		140.00
6	"	4-in.	"	"	"	250.00	1,500.00
3	"	6-in.	"	"	"	650.00	1,950.00
1407	meter boxes, and setting do.				"	8.00	11,256.00
						$31,575.50	
Add 20%						6,315.10	
							$37,890.60

7. Tools, teams, vehicles, furniture, etc., estimated at..... 3,500.00

8. North Knoxville. Merged into general distribution.

9. High service pumping station and filter plant:

A. Buildings, comprising engine, boiler, coal and filter house, chimney, stack and settling basins.

1107

Foundations, year ending M'ch 31, 1894, then valued	$2,745.66
Building, year ending M'ch 31, 1895, then valued	12,961.92

Fire protection and lighting fixtures, year ending M'ch 31, 1896, then valued at.....	132.00	
Lightning rd. yr. ending M'ch 31, 1900, then valued at.....	60.00	
Addition to settling basin, yr. ending M'ch 31, 1900, then valued at	2,341.52	
Cabinet, yr. ending M'ch 31, 1901, then valued at..	30.00	
Second addition to settling basin, year ending M'ch 31, 1902, then valued at.....	3,769.98	
	$22,041.08	
Add for advance in prices since then, 15 %...	3,306.16	
		$25,347.24

B. Pumping machinery and appurtenances:

(*d*–1) Manning boiler, &c. yr. ending M'ch 31, 1894, then valued at.....	$1,008.00	
Do. yr. ending M'ch 31, 1895, then valued at..	360.00	
		$1,368.00
(*a*) Deane, horizontal comp. cond. pumping engine, condenser, &c. erected yr. ending M'ch 31, 1895, then valued at.....	$3,600.00	
(*b*) Foundations for do. do.....	388.98	
(*c*) Suction and discharge connections for do. do.....	360.00	
		$4,348.98
(*d*–2) Horizontal boiler and fittings, erected year ending M'ch 31, 1897, then valued at.....		1,230.00
		$6,946.98
Add for advance in prices since then, 10 %.....		694.70
		$7,641.68

1108 C. Filtration plant:

Original installation, year ending M'ch 31, 1895, comprising:

(*a*) 14 Warren Gravity filters, 10′ 6″ diam. with piping, valves, alum apparatus, clear water weir tank, Westinghouse engine, shafting, pulleys, hangers, belting, operating floor, etc.
(*b*) Foundations, drainage channels, sump wells, etc.
(*c*) Sewers, manholes, catch basins, etc. in Company's premises.
(*d*) Sewers, manholes, etc. in Payne St.
(*e*) Bridging and flooring for alum apparatus and storage, and
(*f*) Foundation for Westinghouse engine,

All taken at the prices at which the plant was then estimated.....	$30,271.56	
(*a*–2) 4 additional filters, and		
(*b*–2) Foundations, etc. for do. year ending M'ch 31, 1897, then valued at.....	5,820.00	
		$36,091.56

D. Grading and fencing:

Year ending M'ch 31, 1895, then valued at...	$1,046.00	
" " " 31, 1897, " " " ...	18.00	
" " " 31, 1901, " " " ...	36.00	
		$1,100.00

10. Standpipe on Reservoir Hill. 32 ft. diam. x 85 ft. high. Erected in 1894, comprising:

A. Foundations, and
B. Tank and Appurtenances.

Estimated as of that time at.....	$13,505.87	
Add for advance in prices since 10 %.....	1,350.59	
	$14,856.48	
Addition substructure, erected, 1902.....	4,308.40	
		$19,164.88

1109 11. Improvements on Lonsdale-Beaumont real estate:

Original cost, estimated at.....	$35,700.00	
All of which is disused.....	35,700.00	
	00,000.00	

12. Buildings, machinery, etc., at L.-B. pump sta.:

Original cost, estimated at.....	$15,420.20	
All of which is disused.....	15,420.20	
	00,000.00	

13. Standpipe, Lonsdale-Beaumont plant:

Taken at estimated original cost, including foundations, tank, and appurtenances..... $7,680.00

14. L.-B. Distribution pipes and appurtenances:

Merged into the general plant.

15. L.-B. Service pipes and appurtenances:

Merged into the general plant.

16. L. B. Meters, boxes and connections:

Merged into the general plant.

17. L.-B. Tools, teams, furniture, etc.:

Merged into the general plant.

18. Construction supplies, in stock:

Taken at the amount on hand M'ch 31, 1902..... $13.265.75

1110 *Summation of Cost of Replacement of the Physical Plant and Property Which Was in Use September* 30, 1902.

1. Real estate			$25,772.00
2. Plant and Improvements at River Station.			
A. Engine House and Pits		$28,969.65	
B. Boiler House		3,988.50	
C. Tool and Storage House		314.16	
D. Chimney Stack		0.00	
E. Coal Chute and Pocket		1,742.16	
F. Fencing Craig St. lot		210.00	
G. Pumping Machinery and Appurtenances,			
a. Original Davidson Machinery, inc.			
b. Foundations, and			
c. Suction and Discharge pipes	0.00		
e. New Deane Vertical Pumping Engine, including			
f. Foundations and			
g. Suction and Discharge Pipes	$17,811.72		
h. Pulsometer Pump	258.00		
i. Suction Pipe to Screen Well	60.00		
j. Pipes for flushing screen well	144.00		
k. New Worthington Pumping Engine, including			
l. Foundations, and			
m. Suction and discharge pipes	20,247.36		
d–1. Two original boilers, net,			
d–2. Two additional " "			
	$38,521.08	$35,224.47	$25,772.00
1111			
Forward	$38,521.08	$35,224 47	$25,772.00
d–3. Two boilers and appurtenances set in 1895,			
d–4. Two boilers and appurtenances set in 1901, all at	12,846.90		
		51,367.98	
H. Stairways, gradings, etc		1,694.00	
I. Intake Tower		11,269.50	
			99,555.95
3. Reservoir, East Knoxville			33,126.00
4. Distribution Pipes and appurtenances			454,852.78
5. Service Pipes and Appurtenances			54,499.20

6. Meters, Boxes and Connections		37,890.60
7. Tools, Teams, Office Furniture, etc		3,500.00
8. North Knoxville, Merged into #4.		
9. High Service Pumping Station and Filter Plant.		
A. Buildings, inc. settling basins	$25,347.24	
B. Pumping Machinery, inc. engines, boilers, foundations, etc	7,641.68	
C. Filtration plant, inc. drains, foundations engines, etc	36,091.56	
D. Grading and Fencing	1,100.00	
		70,180.48
10. Standpipe on Reservoir Hill		19,164.88
11. Improvements, L.-B. Real Estate		0
12. Buildings, Machinery, etc. at L.-B. Station		0
13. Standpipe, L.-B. Plant		7,680.00
14. L.-B. Distribution Pipes, Merged into #4.		
15. L.-B. Service Pipe. Merged into #5.		
16. L.-B. Meters, Boxes and Connections. Merged into #6		
Forward		$806,221.89

1112

Forward		$806,221.89
17. L.-B. Tools, Teams, etc., Merged into #7.		
18. Construction Supplies, in Stock, March 31, 1902		13,265.75
Total		$819,487.64

1113 Q. Now Mr. Wheeler, does this estimate of replacement take any account of the percentages that you have added in your first analysis?

A. It includes what we call primary construction percentages for engineering, contract-'s service and profits, and interest on capital during construction, aggregating 20% which I have used throughout all my estimates.

Q. In order to make it perfectly clear to the court, please state which of the percentages you have employed in your original analysis are not employed in the analysis for replacement?

A. I have not applied to my estimate of the present cost of replacement the percentage allowance for administration, contingencies and expenses, the "going concern" &c. aggregating 20%, nor have I undertaken to convert the cost of replacement into a corresponding amount of securities by applying the 90% of the face of the securities as the amount of cash to be yielded thereby. I have simply dealt with what I call primary construction cost.

Q. What part, if any, does the matter of depreciation play in that?

A. I have not dealt with depreciation cost; this estimate refers solely to the estimated cost of now replacing with a new plant identical in all respects, those parts of the plant which were in actual use September 30, 1902; therefore it does not include any

allowance for any portions of the actual plant which have been discontinued, eliminated or replaced.

Q. Do you consider in that statement of replacements the replacement of any part that is not now in use?

A. I do not. In this estimate I have used the same classifications of the various parts of the property, designating the
1114 different parts thereof by numbers and letters that I used in my estimate of the fair invested value in the plant as it was created from time to time. I have parenthetically referred here also to certain portions of the plant and property that were included in the original plant, but which have been cancelled by their discontinuance or replacement since then. In making this estimate I have in some cases used the same values that I included in my estimate of the original cost of creating the plant. For instance, in the case of real estate. I have assumed that its replacement cost would be now the same as I allowed for it when the real estate was purchased originally and added to from time to time since 1882. In the case of the buildings, I have taken the buildings at the pumping station those portions of them as now exist, as of the same cost at which I estimated their original creation. I have not followed that rule with reference to the buildings at the high service and filter stations for this reason: the buildings as they now exist at the river pumping station constitute replacements of smaller buildings previously constructed there. The present building has been replaced in parts and not as a whole at one time, and hence while a building constructed as a whole now would, according to my judgment and information cost more than the same building constructed as a whole three to thirteen or fifteen years ago, or even twenty years ago, yet I have assumed that the additional cost in building it as a whole now is equaled by the increased cost that attended its construction at different times as it was actually erected. In case of the high service pumping and the filter building, that building was erected in its entirety as it now is, with the exception of
1115 the two additions to the settling basin of the filter plant, and was so erected at a time when building construction was to be had at substantially lower prices than now prevail. I have therefore added to my previous estimate of the fair construction cost of this building as it was originally erected, what I have considered a fair percentage to cover the additional cost of building at the present time, which percentages in the case of this building and other parts of the plant I set out in my analysis. Prevailing prices of pumping machinery, of iron and steel are now higher than they have been at any previous times within which any of our present machinery, boilers and standpipes were erected, and with reference to some parts of the machinery, and iron and steel work in the plant, exclusive of piping, I have therefore added certain percentages (which appear in detail in the analysis) to the estimate which I previously made to the cost of creating those portions of the plant. I have not made such an addition to my original estimate with reference to the West Knoxville standpipe, because I have assumed that an equally serviceable standpipe could be erected

now at the cost at which I estimated that one was erected. In case of the cast iron pipe and appurtenances, I have estimated its replacement cost at prices based upon quotations which the company have received for furnishing pipe during the past Autumn, and which I have transformed into prices per pound which appear in my analysis. I have also estimated the price of lead at quotation prices of the last Autumn which appear in this analysis, and with the exception of those special prices, the balance of the items entering into cast iron pipe and appurtenances remain the same as estimated by me in my cost of originally creating the plant.

1116 I think the details of the analysis are sufficiently explanatory of any other features of the estimate.

Q. Your aggregate then of the cost of replacement is $819,487.64?

A. It is. That includes the item of construction supplies that were on hand March 31, 1902. I am advised since incorporating that item into this analysis that that was rather a larger amount of construction supplies than the company usually has on hand, so if I were to revise that estimate I think I should reduce that item from $13,265.75 to perhaps $8,000.00 or $10,000.00 only.

Q. Do you consider the result you have reached as showing the fair and reasonable cost of replacement of the entire plant at the date indicated, September 30, 1902?

A. Yes sir I do consider it as a fair estimate of what it would cost to replace the plant as of that time.

Q. Now Mr. Wheeler, from your knowledge and experience as an expert in water affairs, do you consider the cost of replacement the best criterion for determining value in an inquiry of this kind?

A. No sir I do not.

Recross-examination by Mr. PICKLE:

Q. Mr. Wheeler, in the last statement, being your cost of the reproduction of this plant you have not stated as you did in your estimate of the cost of the plant on original examination the price per ton at which you estimated cast iron pipe. Will you now please state that fact?

A. These prices per pound multiplied by "2000" will give you the price per ton, and I will write those prices in this statement.

Q. Have you made an estimate of the reconstruction of this plant as of date March 31, 1901?

A. No sir, I have not.

1117 Q. The price of machinery, pipes, &c. entering into construction of a plant of this sort, are higher now than they have been for ten or fifteen years, are they not?

A. In general, they are, yes sir.

Q. They are higher now than they were the 31st of March 1901, are they not?

A. Yes sir, on an average they are.

Q. How much higher on an average, would you say Mr. Wheeler?

A. Well I don't know; I don't carry in my mind now just what the prices were, but I presume an average of ten per cent. higher than they were a year and a half ago; perhaps more, perhaps less.

Q. I see you have estimated the cast iron piping in this statement for replacing, according to size, from $31.00 to $36.60 per ton; within the last ten or fifteen years, such piping has been as low as $17.00 has it not?

A. There was a year or so, about four or five years ago in which those larger sizes could have been bought at about $17.00 a ton; the smaller sizes, three or four inch, by themselves, were never quite as low as that according to my recollection.

Q. Well running through from 1890 to 1900, the average price of such pipe wasn't over $25.00 per ton was it?

A. Well I wouldn't undertake to say about that. This analysis that I made, I made with a good deal of care, and spent many days on it, and I should not like to make an off-hand statement as to the average price, through a long number of years without a thorough examination of the matter. I think on an average it was higher than that, but I am unable to say definitely at present. A
1118 fair average to be applied to a complete plant of this sort would be governed by the relative amounts of the plant that were installed in different years. If the greater part of it was installed at a time when pipe was very low, its construction cost, on an average, would be reduced thereby; if, on the other hand a greater part of it was installed when pipe was high, its average construction cost would be increased. So that the average price of pipe in the general market does not determine the average cost at which the pipe may have entered into these works.

Q. At any rate, you have selected as the time for estimating the replacement of this plant, a date when cast iron pipe and machinery was at a higher price in the markets than at any other period during the last ten or fifteen years have you not?

A. If your question implies motive in selecting that date, I should say no, but it so happens that pipe and machinery were, on an average, higher at that date than they had been for 10 or 15 years. I selected the latest date at which my inquiry could be applied.

Q. In your original estimate of pipes used in the North Knoxville plant in 1891, you estimate them at $25.00 per ton of 2000 lbs.?

A. I did.

Q. And you estimated pipe in your original estimate of the cost of the plant for the year 1892 at $25.00, didn't you?

A. For fifteen months ending March 31st, 1893, the price was $25.00 per ton.

Q. And for the year ending March 31st, 1894 you estimated it at $20.00, did you not, of 2000 lbs.?

A. I did.

1119 Q. And at what did you estimate it for the next year?

A. For the year ending March 31, 1896 $20.00, except 3 inch, which was estimated at $26.00.

Q. And for the next year ending March 31st, 1897, what did you estimate it?

A. Three inch at $26.00, and all larger sizes at $20.00 per ton.

Q. And for the next year ending March 31st, 1898, what did you estimate it at?

A. Three inch at $20.00, larger sizes at $17.00.

Q. And for the year 1899 at what did you estimate it?

A. For the year ending March 31st, 1899 the same as the preceding year.

Q. Seventeen and twenty dollars?

A. Yes sir.

Q. And for the year 1900 at what did you estimate it?

A. For the year ending March 31st, 1900, 3 inch at $32.00, larger sizes at $28.00.

Q. Now about the same fluctuations in price prevail as to engines, pumps and other machinery as to piping, does it not?

A. No sir, not nearly so great.

Q. Not so great?

A. No sir.

Q. But when one goes up, the other goes up, and when one goes down the other goes down, as a rule, does it not?

A. I couldn't say that that was true. There have been certain factors which have entered into the price of pipe which do not materially affect the price of pumping machinery and the converse is true.

Q. But as a general rule, is that not true?

1120 A. So far as that price is affected by the cost of raw material, that would be true to some extent, but that has not always been the most potent factor in determining the cost of manufactured goods.

Q. Well what about the general rule?

A. I wouldn't undertake to state what the general rule has been in the face of conflicting influences.

Q. This estimate of supplies on hand; are they supplies that are exclusively for construction purposes, or construction and repair?

A. They are what we call "Construction supplies." So far as they are suitable for repairs, construction supplies are drawn upon, and a transfer, I understand is made in the account from Construction to Repair, but they stand in the account as Construction supplies until they are so withdrawn. There are other supplies, especially for repair and operating purposes, which I have made no account of whatever.

Q. Have you, during the time you conducted this plant, kept separate accounts for repairs and construction?

A. I think that has been the practice invariably of the Treasurer.

Q. Where, according to the practice of your company, do you draw the line between the things that constitute construction and things that constitute repairs?

A. It would be difficult, in a general definition, to include all possible cases, unless my attention is drawn to specific cases, but in general, whatever expenditure is made for an addition to the plant, is chargeable to "Construction" and whatever expenditure is made for repairs—the restoring to a condition suitable for use, as

1121 in the case of a break, or of wear, or other defect of a part that has already been paid for and charged to Construction account, such an expenditure is charged to repair.

Q. Now do you keep stock on hands for repairs in addition to the stock you have estimated here for construction?

A. I am not sure about that. The Superintendent can tell you about that. I happened to know that we do keep a stock of operating supplies on hand, but I am not quite certain about repair account. Whether that is so or not, it does not affect the amount of capital that has to be invested and supported out of earnings of the plant, so far as I can, at present see.

Q. It does affect the account to which it would be charged does it not?

A. No sir, for it is ultimately charged to the proper account, whether it stands temporarily in construction or repair account.

Q. At any rate, you think the practice has been to carry this account for construction and to draw from it for repairs?

A. I think that is probably true with reference to some portions of the supplies. For instance, if a repair of the pipes is necessary, they would go to stock for a new pipe with which to make the repair, and construction account would be credited, thereby reducing the value of the stock so drawn from, and repair account would be charged with it.

Q. Why do you carry so large an amount in stock for?

A. Because it is a large plant and involves a good many supplies, some of them being quite expensive.

Q. You avail yourselves of a low market to buy them, of course?

A. No sir, I do not think that is the reason. According
1122 to the best of my knowledge and information—during the past two or three years, and my information does not go back of that—we have carried from $10,000 to $13,000 or more of such supplies.

Q. Your stock is somewhat reduced now, isn't it?

A. As I stated, I think it was somewhat less on the 30th of September, 1902 than on the 31st of March last to the extent of $3000.00 or $4000.00, possibly a little more.

Q. Mr. Wheeler, what is a hydrant put in for; what is the object in installing a hydrant?

A. What kind of a hydrant do you refer to?

Q. I mean the street hydrants, such as we find on the streets?

A. The object is to satisfy the obligation in the contract with the City of Knoxville; they are used under that contract. The purpose of their use under that contract is for the extinguishment of fires, and they may also be used for flushing streets and gutters.

Q. Those are the sole or principal uses of them?

A. Well unless you call my attention to some other point, I don't think of any other uses at present.

Q. What is the cost of installing a hydrant as you estimate it?

A. Including its connection with the street main from $30.00 to $45.00—the cost of *installing the hydrant itself* I now refer to.

Q. How many hydrants have you in the old City at present?

A. I don't think I am able, from any information I have here to separate those in old Knoxville from those formerly in North and West Knoxville.

Q. How many are there altogether?

1123 A. The number to September 30th, last, according to my present information, was 250. Whether a few of those are private fire hydrants, I am not quite certain—I mean by that, hydrants rented by private corporations.

Q. What rentals do those hydrants pay you annually?

A. I should have to refer you to the Superintendent for that. The sum stipulated in the contract has been subject to some changes, but just what that change is, I don't recall at present.

Q. Doesn't your contract with the City of Knoxville—I mean the old City—provide as follows:—"The City further covenants and agrees to pay said Company as rent for seventy-five hydrants heretofore stipulated to be erected, Fifty Dollars each per annum, payable in quarterly installments on the last day of each quarter, beginning on the date on which the City shall commence receiving a supply of water from said works, and for any additional hydrants erected for the use of the City it will pay in the same manner at the rate of not more than ($50.00) Fifty Dollars each per annum?"

A. I presume that is correct as read from the contract, but as I stated, my present information and belief is that the actual payments that have been made since 1888 have not been in accordance with the terms of the contract.

Q. And does not the same contract contain this stipulation: "Said Company will furnish water free of charge (except the rental of hydrants as herein stipulated) from said hydrants for the sprinkling of streets and flushing of gutters and sewers along, on and under such streets of said City as are or may be curbed, guttered or sewered, provided that in flushing not more than two of said

1124 hydrants shall be opened and used therefor at one time; also said company will furnish free, through said hydrants, water for all purposes of the Fire Department and for supplying the City Hall building and offices and prisons therein."

A. I think that is correct.

Mr. CALDWELL: I object to the witness stating the contents of papers on file, as they speak for themselves.

Mr. PICKLE: I am cross-examining exactly in line with what Mr. Caldwell has examined on.

COMMISSIONER: Let him answer.

Q. Now is there not in the North Knoxville contract and the Lonsdale Beaumont contract a similar provision to the one I have read, with additions that you are to furnish public watering troughs, and furnish some of the schools and churches with water upon consideration of the hydrant rent?

A. No, I don't understand it to be in consideration of the hydrant rental, if that is what you are speaking of. The contract will speak for itself in that regard.

Q. Mr. Wheeler, there was a stipulation in both the North Knoxville contract and the Lonsdale Beaumont contract that each of those cities should take a certain number of hydrants at a certain price per annum?

A. Yes sir.

Q. Now what do you understand the hydrants to be for unless it is for the water to be used in such manner?

A. Fire hydrants are properly used for the extinguishing of fires; I think of no other purposes at present.

Q. But these hydrants were put in for specific purposes, wer-n't they?

1125 A. They were put in for that specific purpose under the terms of the contract; however certain privileges were set out for the use of hydrants, subject to limitations, for other purposes, but that such further use was compensated for in hydrant rental, I do not think to be the case. If it was compensated at all, I think it was compensated for in the exemption from taxation, and in the use of the streets which were given to the company under the contract. In other words, I consider such free water service, to be in a large degree, the price which the Water Company pays for its franchise, if you may so choose to term it.

Q. But the contract doesn't so state?

A. That is true, in express terms.

Q. At any rate for a hydrant, the cost of putting in which you say is about $30.00 on an average, the City of Knoxville is charged $50.00 per annum rental in an expenditure from your company of $30.00?

A. No sir, it don't get $50.00 per annum for spending $30.00 on construction account. That is a grossly unfair statement of the fact. In anticipation of such an interpretation, I qualified a few moments ago the cost of installing *"the hydrant itself."*

Q. Doesn't the City of Knoxville pay your company over $12,000 a year in quarterly installments for the water they use through these hydrants?

A. I don't know sir just what the amount is. The Treasurer can give you that. I think the City pays a less amount than the Company pays in taxes.

Q. Well, since you have mentioned taxes, how much taxes do you pay to the City of Knoxville?

1126 A. I think we pay a little over $12,000.

Q. And how much did you pay last year?

A. Something less.

Q. And how much for the year before that?

A. I think less than that.

Q. But your assessment has been raised this year?

A. Yes sir.

Q. What was it raised to?

A. In the vicinity of $400,000.00.

Q. That includes the three plants, and all other properties, whether in use or not; does it not?

A. You will have to go to the assessors for that. I understand it to be properly applicable to that part of the Company's plant that existed at the time of the assessment within the City limits.

Q. Ar-n't you mistaken about the amount you paid this year; hav-n't you put it too large?

A. I don't think I have. I am content to rest on what the Treas-

urer will be able to tell you later. I told you to the best of my present knowledge.

Q. Now you have made an estimate of the amount of water that you supposed that the City of Knoxville used in flushing their streets. I will ask you how much knowledge you have upon that subject?

A. I have been over that matter very carefully with our superintendent item by item, he having charge of the men who accompany the City's flushing gang, having made an examination and investigation of the capacity of the streams which they draw for that purpose—of the capacity and discharge of the automatic flushing tanks connected with the City's sewers, and having de-
1127 liberately considered the capacity and use by the City's sprinkling carts. In other words, it is a careful estimation resting upon knowledge, and not an arbitrary estimate or guess.

Q. Have you any personal knowledge of the matter at all?

A. I have stated that I made a careful investigation of this matter from information obtained from the superintendent. Personally I did not examine it.

Q. That information you secured was not sworn statements of your employés?

A. No sir, but I accept them as fully as if they were.

Q. How many gallons per annum did you say you thought the City of Knoxville used—I haven't your evidence before me on that point? Over a million gallons, didn't you say?

A. Oh yes indeed, very much more than a million I think.

Q. In making your estimate, you adopted 10 cents per thousand gallons, did you not?

A. For most of that used in the City of Knoxville, I did.

Q. Now I will ask you to examine page "6" of exhibit #6 to the bill in this case, constituting the water rates prescribed by your company April 1st 1895, and state whether or not the rate for water above one million gallons is not 7 cents (per thousand) under that schedule?

A. "Above one million gallons, monthly," for the purposes specified in this schedule, yes sir that is true, but there is no rate established in that schedule for the purpose of flushing streets, or for the use of public fire hydrants, for any purpose. As I have just stated in my testimony, I consider that not a suitable use to make of the hydrants, and it is not a service which the company would render to any other party even at 10 cents. It is a kind of service
1128 which is injurious to the plant, attended by special labor service and unusual repairs, subjecting the pipe system to shock and injury on account of the manner in which the hydrants are opened and closed, and it is for these reasons that I have considered 10 cents per thousand gallons a very conservative allowance to make for the average value of water so used.

Q. Why did you omit it in the rates there for hydrant use, Mr. Wheeler?

A. I have omitted nothing.

Q. Now isn't the reason there is no rate fixed for hydrants, that

you had already agreed in your contract with the City of Knoxville the rate to be paid?

A. Certainly not. This schedule is prepared for private consumers only. It never entered the mind of any one connected with this plant that it was establishing a schedule governing the rates on public fire hydrants.

Q. Have you ever made any claim to the City of Knoxville for water furnished by the thousand gallons, or any other claim than that provided in the contract?

A. Certainly not.

Q. Have you, or do you make any such claim now?

A. We do not.

Q. Your plant is in good condition now isn't it Mr. Wheeler?

A. I think it is in pretty good condition now.

Q. It has about covered the territory that it was designed for, at present, has it not?

A. I don't know what you mean by that question General.

Q. Well I mean it has covered the inhabited portions of the three incorporated cities where water would be demanded?

1129 A. Give me a definite question, and I will give you a definite answer to it.

Q. Well haven't you covered that territory so far as there is any demand for water now?

A. The demand is constant and unceasing. The extensions will be constant and unceasing. I have stated before that a water plant in a community that is not dead, is a plant of unceasing growth.

Q. You anticipate then an increase in the demand of water and of course in the revenues of the company?

A. In demand of water, in the revenues, in the cost of operation and in all the charges against the company.

Q. You don't anticipate any such extraordinary demand as there was in the years 1891, 1892, in the near future do you?

A. "Extraordinary?" I don't recall any extraordinary demand at that time particularly. There was a demand for improvements and in the kind of service, a demand for filtration, a demand for higher standard of management, a demand for economies in the management, and there was such a demand in those regards which I hope will not be required in an equal degree hereafter; but the demand for additional investment of capital to meet the demands of the city, I anticipate will continue, and will be relatively as great in the future as they have been in the past.

Q. You have adjusted your plant with a view to those demands?

A. We have adapted our plant from time to time, with a view to the growing needs as they arise and accrue, but the adaptations do not cease at this stage, and will not cease. My present impression is, as I recall the analysis made referring to increase in plant during the past year and a half of the increase in charges, that

1130 those charges have increased more rapidly than the income, but I wouldn't say that that is absolutely true, without more careful inquiry. I have no doubt it is true, taking into account the

growing demands, and unsatisfied demands of accrued depreciation from year to year.

Q. How much, if any of these additions made during the year from March 31st, 1901, to March 31st, 1902, lie outside the city?

A. I am unable to divide that at present, as I have not had time to do so, but I have asked Mr. Kimball to make that division and he will be prepared to give it to you, or I will do so at a later stage.

Q. But portions of them do lie outside——

A. Portions of them do lie outside of the present municipal limits.

Q. How much land did you buy from Epps & Strong?

A. I haven't the dimensions of that, but it comprises all the land East of the pumping station, lying between the river and Front street up to Cardwell Street.

Q. About what quantity?

A. Well I wouldn't undertake to name areas without dimensions.

Q. How much of it is in actual use by your company—now occupied by your company?

A. Occupied how?

Q. In any manner?

A. Our right-of-way affording access for teams to the Pumping Station from Front Street, runs over the whole length of it. We use a part of it, next to the pumping station as a dumping ground for ashes and cinders, and as a matter of protection to the
1131 river bank, we are making an improvement on a portion of it next to our premises, and extending up the river to protect the bank from washing. It is fair to say that in buying this land we also had in mind the possibility, that at some future date, there may be reopened the question of bringing the drainage from White's Creek or White's Spring branch through this property down into the river at a point of discharge below our intake.

Q. That has not been done?

A. That has not been done. The Water Company offered to cooperate with the City to do this, a few years ago, but the city took no action upon it.

Q. Well about what proportion of this tract is occupied by you?

A. I can't qualify any more definitely than I have. In one sense, we are using the whole of it.

Q. In what sense—did you not have a right-of-way before you bought it?

A. I stated that we did.

Q. Did you have a deed to it?

A. We had a deed or an agreement.

Q. It was in writing?

A. I think it was.

Q. And you had been using that right-of-way for many years had you not?

A. We had for some years; I think we acquired that right-of-way five or six years ago only.

Q. I wish you would file a copy of that paper.

(Paper filed as Exhibit 11.)

Q. How much of this land is occupied for dumping purposes?

A. I couldn't tell you for certain; we are extending our dumping ground all the time.

1132 Q. Has it reached this land at all?

A. Oh, yes, indeed. Since we have bought that land we have stopped the expense to which we were previously subjected for the removal of our ashes and cinders.

Q. How much do you save per annum on that item of expense?

A. I am unable to tell you. Somewhere in the hundreds of dollars.

Q. Give us your best estimate?

A. Oh, I wouldn't undertake to give you an estimate of this when I can furnish you later a correct statement. If you desire it I will furnish you a statement.

Q. I desire it. You have spoken of savings by reason of raising your standpipe, in the pumping of water. What does that amount to per annum?

A. By estimation about one-half of the fuel cost of high service pumping to which we were formerly subjected, but I haven't those figures in my possession.

Q. Can you give me an estimate of them?

A. Mr. Kimball, the Superintendent, can give it to you.

Q. Now this land that was exchanged with Mr. Arnold and you received land in exchange, how much was there of that?

A. That was a piece of land 50 feet in width; that is to say fronting 50 feet on Craig street and 50 feet on Front street and the depth extending from Craig street to Front street.

Q. Was it a separate tract?

A. No, sir, it was a part of the lot of land which the Company previously owned, having a frontage of 150 feet on both Craig and Front streets; in other words it was about one-third of the lot which we had there.

Q. What did you estimate its value to be?

1133 A. I did not estimate it separately. It was a part of one of several lots of land which were originally acquired by the Water Company from the City of Knoxville, the value of which I took at the aggregate price paid by the Company to the City for it, to-wit: $7,800.00.

Q. What are you using the remainder of that 150 feet frontage for?

A. For pipe yard, construction supplies and stock.

Q. Where does the land lie that you got from Mr. Arnold adjoining this?

A. Well I will read you from the statement General which I gave you. I cannot specify more definitely: "land extending from the pumping station westerly about 100 feet to land of Rush Strong, lying between Front street and the river."

Q. What is that used for at present?

A. That is not used directly for any purpose except for extension of pumping station. Yes, part of the company's steps and walks extend out on that land at present.

Q. Did you have to make an extension to your supply yard by reason of having sold off this 50 feet?

A. No, sir.

Q. This property which you got from Arnold is not occupied as a supply yard or anything of that sort?

A. No, sir. We did use, as I now recall, some of the land that was purchased of Arnold in that exchange as a source from which to obtain earth for filling and grading about our own premises incident to protecting the river bank.

Q. You took some dirt from it?

A. Yes, sir, that and the construction of the steps leading
1134 to the pumping station are the only uses of it which I now recall.

The further taking of this deposition was adjourned until Wednesday Morning, December 10th, 1902, 9 o'clock a. m.

WEDNESDAY MORNING,
December 10th, 1902—9 o'clock a. m.

Resumed.

(Continuation of recross-examination of WM. WHEELER:)

Q. Mr. Wheeler I want to ask you about the value that was placed upon the Arnold lot in the exchange, and the value upon that part you exchanged for it?

A. My recollection of that transaction, which I conducted is this: it was broached by Mr. Arnold, who desired to secure an additional tract of land east of his residence from the land which the Water Company owned and was using in part as its pipe and stock yard—he desired to purchase anywhere from 50 to 75 feet frontage on Craig street, and the Water Company was unwilling to part with more than 50 feet. He offered in exchange the land which we acquired of him between Front street and the river, saying that he valued his lot of land at $1500.00, and that Mr. Rush Strong had been endeavoring to purchase it and had offered him a substantial part of his asking price, but I do not recall just how much, and he then stated that he would be willing to part with his land in exchange for what he desired to purchase of the Water Company upon
a valuation of his land of $1200.00. The Water Company
1135 fixed no price, so far as I am able to recall upon its land which Mr. Arnold desired to acquire, and the basis upon which Mr. Arnold valued that piece of land, I do not recall, if I ever knew. The transaction was closed upon the basis I have stated, and I don't remember that any other values came to my attention in the matter.

Q. You took his tract of land and received $500.00 additional for what you parted with?

A. We did.

Q. Mr. Wheeler, the statement you have made of construction cost since March 31st, 1901, is made upon estimates like your

former statement of original cost of construction prior to that time, is it not, and not upon actual cost of material, machinery, &c.?

A. Yes, sir, in principle it is made in the same manner—upon the same general bases as my estimate of the original investment cost.

Q. Was the work done by the employment of a contractor or by the company directly?

A. What work do you now refer to?

Q. The work of construction since March 31, 1901?

A. So far as I recall, all of these additions were made directly by the company and not by contract.

Q. The regular force of the company here was used in making those additions, was it not?

A. We employed labor. We don't employ regularly a sufficient force which is on our pay-roll constantly for making special additions to the plant.

Q. Haven't you a regular office force here that you keep all the time?

1136 A. We have an office force for doing the office work, but they don't construct works outside.

Q. Doesn't your resident engineer here attend to matters of construction?

A. He supervises it, it is under his immediate direction.

Q. Are not the books kept by that force?

A. What books do you refer to?

Q. Relating to construction as well as repair?

A. Well that doesn't specify what books you mean?

Q. Are any separate books kept of construction account?

A. The Treasurer's accounts relating to construction?

Q. The Treasurer's or others?

A. The Treasurer's books are all kept in Boston; the Supervising Engineer's books are all kept in Boston, but the Superintendent keeps his own books here in Knoxville.

Q. But the Boston books are made up of material that is furnished by the resident force here, are they not?

A. All things coming to Boston are transmitted through the resident office here, if that is what you mean.

Q. The books here will show just what, and all that is on the books at Boston?

A. No, sir.

Q. Have you got the Boston books here?

A. What books do you refer to?

Q. The Treasurer's books?

A. I have not the custody of those books.

Q. Have you the supervising engineer's books here?

A. What books do you refer to?

1137 Q. The books kept by the supervising engineer?

A. I think I testified that the supervising engineer kept and made tabulations of the additional construction and entered them upon plans, which plans were put in yesterday and which were shown you. Those plans are here. My Construction Record Books

are here, giving the tabulations of construction from year to year, but I think the tabulations for the last year or year and a half are not yet entered in those books.

Q. Do you know how that is?

A. I have had the book here most of the time, but at present I think it is at the office of the Water Company.

Q. Will you have it brought over?

A. Yes sir, I will send for it now if you desire.

Q. Who had personal supervision of this construction here from March 31, 1901, to September, 1902?

A. I negotiated the purchase and exchange of real estate. The construction of the improvements at the River Station were by plans and directions from my office carried out under the immediate oversight of the superintendent.

Q. Give us his name please?

A. Frank C. Kimball. The plans and directions for the larger extensions of the pipe mains were matters between the treasurer, superintendent and supervising engineer, and the construction of them were superintended by the superintendent. The purchases of meters were negotiated by the treasurer. For the second extension of Settling Basin, plans and instructions as well as specifications were made by me, and under my direction at my office and forwarded to the superintendent for execution. For the raising of the
1138 stand-pipe, the plans for that new substructure, and the plans and specifications for carrying on the work, were made by me and forwarded to the superintendent for execution. That work, like the second extension, Settling basin was work that called for quite an extensive amount of computation, plans, construction notes and directions. That covers the more material parts of the additional construction of that period.

I have here the "Construction Record" book which you have just referred to, which contains tabulations under various heads, of all classes and kinds of plant entering into the complete water works system, arranged in the order of the years when that plant was constructed, beginning however, as I did in my analysis with what was in existence on the 31, December 1891.

Q. When were the entries on this book made?

A. The entries in the book I had made from year to year as the work was done, that is to say, usually the work of one year is entered in this book during the following year. All additions to the system are reported to me by the superintendent—every extension is reported to my office upon what I call an extension form—printed forms are prepared and whenever an extension is made, all the details relating to it, such as the size of pipe, the location of pipe, the length of it, position of all gates, and matters connected with it, as well as the diagram of it, are entered upon that blank form, and such a form is sent to my office. At convenient times after the year during which such extensions have been made, those extension returns are all posted, so to speak, in this Construction Record book.

Q. Does that book contain any entries relating to time
1139 subsequent to the year 1901?

A. No sir, the entries for the period, as I have stated, subsequent to March 31st, 1901, have not yet been made in this book.

Q. Has the superintendent made a report for the years 1901 and 1902?

A. He has furnished me with the data for the making up of this continuation of the estimate down to September 30th, 1902, some of that data having been furnished me by letters received since November, and the rest of it having been furnished me in pencil memoranda since I last returned to Knoxville to testify, to wit: December 8th, 1902.

Q. Then he had made no complete report for the year ending March 31st, 1902, at the time you had taken the witness stand in this case?

A. Yes sir, I think he has furnished my office with the extension returns to which I refer for all of that year, but my assistants in Boston had not yet come to the point of posting them in this book.

Q. Have you those reports?

A. They are in my office at Boston.

Q. Will you furnish copies of same?

A. No sir, for they are very voluminous. That such information can be secured from Mr. Kimball.

Mr. PICKLE: We call for the returns made by Mr. Kimball to the Supervising Engineer, Mr. Wheeler, relating to construction subsequent to March 31st 1901.

A. I will say further that it is possible that the superintendent has duplicates of those in Knoxville, and if counsel or the
1140 Master think it would be helpful, I will endeavor to have sent down the duplicates that were sent to my office, although I am not quite certain that there is any one in my office who would be able to pick them out. I am not seeking to deny any information which will confirm any fact to which I have testified, but will say that such information can be secured here in Knoxville.

Q. What I want is the returns made by Mr. Kimball?

A. Mr. Kimball has those here in Knoxville.

Mr. CALDWELL: Counsel for plaintiff tenders to the defendant the information covered by the superintendent's reports to the Supervising Engineer from the original source of information and from the same witness who furnished them to the Supervising Engineer, and insists that that is sufficient, and that the defendant has no right to impose upon the Supervising Engineer, or his office, the unnecessary labor of transcribing what is shown to be a large collection of documents, when the information is now available in the City of Knoxville where this deposition is taken, the documents referred to being in Boston, Massachusetts, and it being uncertain, as shown by the testimony of the Supervising Engineer whether or not any one in his office is competent to identify the documents called for.

Mr. PICKLE: Counsel for defendant insists upon the right to have

the reports made at the time by Mr. Kimball in order to see whether they agree with the documents that are now presented and offered.

Q. To what extent had Mr. Kimball made reports of these construction accounts prior to the time you took the witness
1141 stand in this case relating to the time subsequent to March 31st, 1901?

A. Taking the heads of the additions made during the year referred to in the order in which they appear in my tabulations submitted yesterday, the information furnished by Mr. Kimball comprises the following: The various amounts and sizes of pipe added to the system during the year ending March 31st, 1902, were compiled by him from his original data and communicated to me by letter which I have here, dated November 24th, 1902; also the replacements and discontinuance of pipe, during the same year, were reported to me by the same letter; also the additions to, and reductions of the number of valves set during the same period, were communicated to me by the same letter; also like information with regard to hydrants. The information relating to additional services, from March 31st 1901 to September 30th, 1902 was communicated to me by letter from Mr. Kimball, dated December 2, 1902, which I now have; likewise similar information relating to the number and size of meters attached to the services of the Knoxville Water Company between the dates mentioned, also the estimate which I have used as to he expenditure for grading, $500.00 initial cost upon the Strong and Epps lot. The additional items comprised under the head of "Distribution Pipes and Appurtenances" laid during the six months ending April 30th, 1902 were furnished me by Mr. Kimball during the last two or three days, by interpolating the quantities of the various sizes in my pencil computation or tabulation of additional construction, a typewritten copy of which is now in my deposition, which original pencil memoranda I have here in my possession.

Q. Well Mr. Kimball spent some time in your office at Boston in preparing your deposition in this case, didn't he, last
1142 Summer or Fall?

A. He spent considerable time in my office and the Treasurer's in preparing the data, &c.

Q. About how much time did he spend?

A. I think he was in Boston altogether two months or more.

Q. When?

A. I have no notes of the dates, but I think he was in Boston from the vicinity of July 1st toward September 1st, perhaps a little longer. He wasn't working on this case all the time, but he was in the City and vicinity most of that time.

Q. What was he doing then?

A. I will let him answer that for himself.

Q. Well this information was furnished during his trip to Boston and stay there?

A. Most of this information made use of in my analysis, which I put in last month, was in my files at that time, if that is what you refer to.

Q. Have you those files?
A. Here is the book right here.
Q. I am asking about the files?
A. Well this book is what I mean by "my files."
Q. Have you any reports with reference to construction in your files at Boston or elsewhere other than the ones which have been furnished you since Mr. Kimball's trip to Boston last Summer or Fall; if so, they are the ones I wish you to produce—I mean relating to construction since March 31st, 1901?
A. No sir I think of none.
Q. How did you get at the item of grading, planting and drainage on the easterly side of the lot of Strong & Epps' addition,
1143 estimated at $500.00?
A. I have just stated to you that that was furnished to me by letter which I hold in my hand from Mr. Kimball.
Q. What was the date of that letter?
A. December 2, 1902.
Q. Does it furnish any itemized statement of the cost of this work?
A. It does not.
Q. What do you mean by "planting" in this item?
A. I refer to the planting of the graded slopes to which I testified yesterday, of Bermuda grass, also the planting of rows of willows along the bank of the river below high water line; also the planting of some kinds of vines to protect the slopes from washing.
Q. Any other trees except those?
A. Well I cannot give you any other particulars at present.
Q. Was this grading done under any sort of a contract with anybody?
A. No sir.
Q. Who did the engineering for this grading, planting and drainage?
A. It was administered by Mr. Kimball; it was the result of conferences between myself and Mr. Kimball had at the time this purchase was negotiated last April or May upon the ground.
Q. Was there any survey, or estimates or anything of that kind made?
A. Formal surveys?
Q. Yes sir.
A. Well, there were surveys of the land I think. I don't think there were any preliminary estimates made.
1144 Q. Did you furnish any plans or specifications for that work?
A. No sir, other than were furnished orally.
Q. Mr. Wheeler, look to page "32" of your original deposition in which your furnish a summary of "Distribution Pipes and Appurtenances" used or put down in original construction to 1884. Can you state on what streets those pipes were laid—each kind?
A. I can state on such authority as is afforded by the deposition of Mr. M. Nicholson, City Engineer.
Q. In what case?

A. In the case of "Knoxville Water Company against the Board of Mayor and Aldermen," about the year 1887.

Q. Is that the source from which you obtain the information upon which you base this estimate?

A. Upon which I base my information as to quantities laid at that time, that is the source of my information.

Q. Have you examined the deposition of Mr. A. H. Martine taken in the same case?

A. Well, I have no recollection about it at present. I relied upon the deposition in that case of a representative of the City, assuming that it was least open to objection on the part of the city in this case.

Q. Mr. Martine was superintendent of this Company from 1884——

A. He was at some time, I am informed; I don't know the dates.

Q. Have you a copy of parts of his deposition?

A. No sir, I don't find a copy of any parts of his deposition. I looked over that record some years ago and I picked out, what
1145 seemed to me to be significant as to what was actually done by way of laying the pipes, and also upon some other points. Mr. Martine didn't impress me as being instructive on that point. I do not recall particulars at this time.

Q. Then the basis of your estimate is upon Mr. Nicholson's deposition?

A. So far as those quantities go, it is. Perhaps I ought to add to that that the use which I have made of these particular quantities, found in the deposition of Mr. Nicholson, has been simply to indicate *when* different parts of the pipe system were constructed. It does not affect, in the slightest degree, the amount of my estimate whether I had used those quantities as of that particular date, or simply had relied upon the total quantities of pipe which we found to have been laid by what I have called the "pick and shovel survey" made immediately after we became interested in the property since all the cast iron pipe laid from the original construction down to 1891, I have estimated at the same price, and the total quantity laid during that period is not affected by the information afforded by the deposition of Mr. Nicholson, but is determined solely by the surveys made by us in 1891 or thereabouts.

Q. You have estimated the cast iron pipe laid in original construction and down to 1891 at $35.00 per ton, F. O. B.?

A. Yes sir.

Q. Now I hand you a paper, purporting to be the deposition of A. H. Martine, who states that he became superintendent of the Knoxville Water Company about the 1st or 2nd of June 1884, and was taken sometime thereafter. I will ask you if it does not
1146 appear from the face of his deposition that the quantities of pipe that had been laid prior to its taking was as follows:—

16".....	550 feet.
14".....	2000 "
12".....	2400 "
10".....	4375 "

8"	9225	feet.
6"	14,330	"
4"	9,710	"
Total	43,390	"

Mr. CALDWELL: Counsel for plaintiff objects to the introduction into this record, from a paper which is not even filed in the record, and which probably would be incompetent, if filed, statements of quantities or of other facts that are assumed to be material to the cause, and insists that the only proper way to get these facts into the record is by the production of the best evidence upon that point by the defendant itself, and insists that the method of examination is improper and immaterially incompetent, and asks the ruling of the Master before an answer.

Mr. PICKLE: Then the defendant excepts to the statement made on page "32" of Mr. Wheeler's deposition, having been made from information obtained from a deposition contained in the same case, and likewise to all evidence where the witness testified upon
1147 information from Mr. Kimball.

COMMISSIONER: The plaintiff's exception to the reading from that deposition is sustained, and the exception made by the defendant as to what has previously taken place, is over-ruled.

Q. Now what do you refer to by a "pick and shovel survey" Mr. Wheeler?

A. The pick and shovel survey, to which I have just referred, and to which I alluded in my direct as well as cross examination, is a determination of the actual pipe work that was under ground, by means of excavations made in various streets to determine the size, length and location of all the pipes that were found in connection with these works when the present owners came into possession of it. This work was done chiefly during the year 1891 under the immediate supervision of my assistant, Mr. Kimball, who is now the superintendent of the Knoxville Water Company. From the surveys so made, the plans of the pipe system of the company, to which I testified and which were put into the case on yesterday were made, and also from the same information, these construction records of the supervising engineer to which I have just testified, were made up so far as they refer to the pipe that were found here in 1890, and it is upon the quantities so determined of the various sizes of pipe that my estimate of the fair investment cost of this property has been based, and that estimate has not been affected in any manner whatever by the reference which I have made to certain quantities assumed to have been laid in 1884 upon the information afforded me by the deposition of the City engineer, Mr. Nicholson.

Q. Were you present during that survey?

A. No sir, not personally present all the time. I was in
1148 the city more or less of the time. Mr. Kimball was my assistant, and until advised otherwise, I am assuming that it was a proper basis upon which to form my judgment as supervising engineer of this company as to what its works consisted of. It was

also a proper basis I think for the Supervising Engineer of this Company to testify as to what its works comprised, and I offer to substantiate my testimony upon that point by Mr. Kimball, who is familiar with the immediate facts.

Q. Then you don't testify from personal knowledge, but from information afforded you by Mr. Kimball?

A. I testify from the official knowledge I received, and as to its competency, I refer that to counsel or to the Master.

Mr. PICKLE: We object to his testifying from information given him by Mr. Kimball.

COMMISSIONER: The objection is over-ruled.

Q. Now Mr. Wheeler how many meters did you install commencing March 31, 1901 and ending March 31, 1902?

A. 1006 meters, according to the best of my knowledge and information.

Q. And how many between the 31st of March 1902 and the 30th — September 1902?

A. 126 during the succeeding six months to which you refer.

Q. Were these on new or old services?

A. Well I am unable to testify from personal knowledge. I can give you my general opinion on the subject, if you desire it.

Q. Well if you have knowledge such as you have been testifying from?

1149 A. Well for the most part they were upon old services—to some extent they were upon new services.

Q. Can you give the proportion?

A. No sir, I am unable to give it.

Q. How many new services did you install during the year beginning March 31st 1901, and ending March 31st 1902?

A. Four hundred and eleven (411).

Q. How many new services did you install during the subsequent six months?

A. Two hundred and eleven (211).

Q. Mr. Wheeler, since you have made an estimate of the quantity of water that the City of Knoxville should have used from hydrants, and you state on page "5" of your deposition that you had made a similar estimate where one Water Company had supplied water to a neighboring municipality plant, I will ask you now to estimate about the quantity of water that was furnished by the Knoxville plant to the North Knoxville plant beginning with its installation in 1891, or about that time, on up to 1897 or 1898, per annum?

A. In the first place, I have referred to no analogous case on page "5" of my testimony. With reference to the specific answer you ask for, I don't know how I could make that up. The inquiry is, as I understand it, for quantities of water consumed within the limits of North Knoxville during that time?

Q. Yes sir, and furnished by the Knoxville Water Company?

A. I have no basis on which I could form an estimate of that.

Q. You couldn't make an estimate?

A. I can conceive of no basis upon which I could make an estimate that I could vouch for.

1150 Q. Could you give such estimate by an examination of the records of the Water Company's office?

A. No sir I don't think there is a figure in the records there bearing upon that point.

Q. How often have you been called upon to testify as an expert in Water Works cases?

A. In general I should say that I have testified in Water Works valuation cases on some phase of valuation, in a dozen cases more or less.

Q. In what cases have you testified where the question of annual allowances for depreciation was involved?

A. In the Danvers case is the only case in which I have made a close computation on that subject. In that case I was a Commissioner. I think I testified on depreciation in a case in Dover, Maine.

Q. I believe in the Danvers case you fixed the per cent. at about 1.93%?

A. I think that is what it figured, but I think it was fixed at 2%.

Q. What have you fixed it at in other cases where you have testified?

A. Well in the Dover case I think I used 1%. The Dover case is a case in which the question of replacement has not, during the last 14 years, since the Works have been built, arisen. It is a place of practically no increase in population. In fact, in some censuses there has actually been a reduction in population. It has no standpipe and very little perishable features, the plant consisting mostly of an earth reservoir and a system of cast iron pipes not subject to replacement.

Q. In the Dover case were you testifying as a witness

1151 called by the city or by the Water Company?

A. By the Water Company.

Q. How large a place is Dover?

A. Dover and Foxcroft combined, they being two villages supplied by these works, the population is in the vicinity of 2,500 or 3,000. A very small place.

Q. How long had the Water Works been in operation when you testified in that case?

A. I think since 1888.

Q. When did you give your testimony?

A. In the month of October last and perhaps the first day or two of November.

Q. Can you recall any other case in which you testified on the subject of per cent. of depreciation?

A. No sir I do not. There are none of those cases, so far as I now recall, in which an aspect of valuation like this arose. The valuations which have occurred in the works in which I have had occasion to testify upon had rested upon two different bases—usually upon the capitalization of income, with no consideration of arrears of accrued depreciation to be taken into account. One other feature was in the Gloucester case, where franchise being excluded, the

capitalization of income was also excluded and in that case the property was valued upon physical value plus value of impounded water and water rights controlling the impounding of water sources, and on the "going concern."

Q. What was the nature of the litigation in the Dover case?

A. The Water Company there had a contract with Dover and Foxcroft Fire Company, it was called, being in effect a fire district incorporated solely for the purpose of protecting the district against fire, with power to contract with the Water Company, and in
1152 this contract the village had a right at any time after ten, and before fifteen years had elapsed to have an appraisal of the works made, and to take the works at the price determined by appraisal. The appraisal was made under that right of the villages, and the works were taken last month at the appraised valuation.

Q. And you cannot recall any other case where you testified on the subject of per cent. of annual depreciation?

A. No sir I don't recall any. (For correction see p. 594.)

Q. You have figured in this case as your estimate the actual depreciation that has taken place?

A. Yes sir I have figured the actual depreciation so far as it is determinable by experience.

Q. Now Mr. Wheeler you spoke yesterday of finding when you came here some evidences of bad management in this plant; what do you refer to?

A. Well I found that hotels, saloons, stables and other consumers other than domestic or residence consumers were supplied without meters, which resulted in a great waste of water, a waste of water which had already overtaxed the pumping capacity of the machinery; I found more or less free water service to which I have testified; I found that there were no plans or records of the underground or unexposed portions of the Works, the location of gates unknown to some extent, the sizes of pipe consequently unknown, except as remembered by some one who had been connected with the works when they were built; lack of system in the keeping of the accounts in the office, and the proper posting of charges as between construction, maintenance and operation accounts; a general lack of systematic record and management of the plant such as is necessary to secure the greatest efficiency and economy in operation. The
1153 plant had fallen into the hands of controlling owners who were not Water Works people, the original builders of the works having ceased to be in control, having parted with their interest to some extent; the owners as of the time when I first came here had had no previous experience in water works management, and consequently it was necessary to reorganize and systematize the methods, and it was also necessary to consider improvements and extensions in construction.

Q. How many families at that time were there that were receiving water that no collections were being taken from?

A. I am unable to tell you. I have no data upon that point.

Q. Wasn't Mr. Woods your Superintendent here for a while?

A. He was when I first came here.

Q. Didn't he report to you that there were 356 of such families?

A. If he did I hav-n't the slightest recollection of it. I don't think he did.

Q. Well that sort of management would seriously affect the income of the company wouldn't it?

A. It would if continued indefinitely.

Q. Now you state about a reorganization to remedy that condition of affairs, and you were paid, you and your partner $6,000.00 a year for a certain period during which you were engaged in that business?

A. Yes sir for a year and a half.

Q. You had to over-haul the plant by pick and shovels, there being no records?

A. Yes sir, make complete surveys of the territory here, of the houses to which I have referred and shown on the plans put in the record yesterday, surveys looking to new sources of supply
1154 and negotiation with the city government at that time.

Q. The plant was less than ten years old at that time wasn't it?

A. It was, and the city was very rapidly growing, and had been since the original construction.

Q. And if it had been properly managed, it ought to have been in fine condition, oughtn't it?

A. It is fair to say that good management ought to maintain good condition. The company was hampered however, for lack of funds and there were conditions which explained, and perhaps to some extent excused the conditions to which I have referred.

Q. The lack of funds was attributable to the fact that the original promoters to this scheme hadn't paid up their stock chiefly?

A. No sir I didn't understand that it was. The one crying need of this company before I purchased, and for nine years afterward was the need of the usual method of raising money, by pledging the property as security for it.

Q. It had created its conditions under which it existed by the contract?

A. Yes sir it had, at a time when the great development of those needs was not probably anticipated.

Q. Mr. Wheeler in how many cases have you testified with reference to the per cent. of gross earnings that is essential for operating expenses?

A. I never testified on that point I think. I don't know of any law fixing the percentage between gross earnings and operating expenses. I know of none and never determined it in any case. I don't think my mind was ever directed to that inquiry.

Q. Is there not an estimated per cent. among experts on
1155 this subject?

A. Not among any experts that I have ever encountered whose opinions have come to my knowledge.

Q. Do you know Mr. Ludlow of Winston, North Carolina?

A. I have met him recently.

Q. Is he in your employ?

A. He has been employed to testify in this case, if desired.

The further taking of this deposition was adjourned until 9 o'clock Thursday morning Dec. 11, 1902.

THURSDAY MORNING, *December* 11, 1902.

The further taking of this deposition was adjourned until Thursday afternoon 2 o'clock P. M.

THURSDAY AFTERNOON, 2 O'CLOCK P. M.

The further recross examination of WM. WHEELER resumed.

Q. Mr. Wheeler what make and quality of meters, hydrants, valves, stop-cocks and meter-boxes have you used in your construction of this plant, and from whom purchased?

A. Well the meters have been purchased very largely of the National Meter Company of New York, some of the Hersey Meter Company of Boston and possibly a few of some other companies, but I am not sure—those meters being purchased by the Treasurer or Superintendent. The valves used here includes some that have been purchased of the Coffin Valve Company of Boston, some recently of a Company in Pennsylvania, the name I cannot recall, but which the Superintendent will be able to give you. The hydrants, some were purchased of the Coffin Valve Company of Boston and the others of numerous other companies which I am unable to give you.

1156 The Superintendent can give you all the details on that line. The Meter boxes I think were made here in Knoxville. The Valve boxes used are made either by Bingham and Taylor of Buffalo or by A. W. Morgan of Buffalo, possibly some others. The Stop-cocks were furnished by the same parties who furnished the gates or the valves as you call them, and to some extent by dealers in service pipe, brass-ware; of whom the service supplies are secured, I am unable to say.

Q. By whom were the purchasers made?

A. Well they have been made by different ones at different times. Prior to 1890 I have no knowledge; about that portion of the works constructed by Wheeler & Parks under the contract, the supplies were purchased by them. The supplies purchased for the work done by the Water Company since 1890, and not under contracts, have been purchased usually by the Treasurer or by the Superintendent—generally by the Treasurer.

Q. You have stated that the meter boxes were furnished by some one in Knoxville; by whom, if you know?

A. I am unable to say. The meter boxes are of various kinds—a great majority of them I think consist of a timber construction, coated with some preserving material, and provided with cast iron frames and covers, made I understand in Knoxville, but by whom I am unable to tell you. Other meter boxes included under my estimate, are of brick construction, constructed in place as I understand, with cast iron frame covers. This refers to some of the larger meters.

Q. From whom was the pipe, used since March 31, 1901 and now on hand, purchased?

A. Well I am unable to say absolutely. I think I have already testified that as a general thing the larger part of the pipe
1157 used here during the time to which you refer has been purchased from Chattanooga foundries and to some extent from Alabama, and to some extent from other foundries, but I am not certain about that.

Q. From whom was it purchased in Alabama?

A. I am unable to say as those purchases were not made by me and I am not quite sure of the name of the concern.

Q. By whom were these purchases of pipe made?

A. Either by the Treasurer or the Superintendent—I think by the Treasurer.

Q. What parts and what proportion of the plant erected or replaced in 1891 has been since replaced?

A. None whatever so far as I recall. That is true so far as any substantial quantities go which I have considered in my analysis. Of course it is quite possible that in making a connection for a new street extension leading from some pipe in the street from which the extension is to be supplied, certain small pieces of pipe may have been cut out which may have been laid since 1890, but so far as I now recall there have been no substantial replacements of portions of the pipe that have been laid since 1890.

Q. Has there been any replacement of the plant other than the pipe which was instituted in 1891 or about that time?

A. I think my former answer covers that. No substantial quantities that I know of. The Superintendent can tell you about that. In saying that I excluded from consideration the works of the Beaumont Company which have been laid since that time and of which some discontinuances have since been made.

Q. But those parts of the Lonsdale-Beaumont Water Company were not put in by the Knoxville Water Company were they?

A. Not primarily. There may have been certain exten-
1158 sions made since 1890 of wrought iron pipe where fire service has not been called for and to meet temporary exigencies, for which the greater cost of a cast iron pipe would not have been justified, and which may have since been replaced as demands increased by pipes of larger sizes.

Q. What portions of the plant instituted in 1891 are in such condition as to indicate that they will need replacement in the early future?

A. I cannot give you any information upon that. That is not the kind of an inquiry I would know how to approach. It depends upon the development from time to time of new demands, changes and conditions. I wouldn't know how to anticipate change until occasion for it arises.

At this point I would like to add to my answer on yesterday as to what other cases in which I have considered the element of depreciation, and I overlooked in my answer the Lewiston Water and Power Company of the State of Washington, of which I am Con-

sulting Engineer, for which Company I made an analysis of the fair cost of supplying water to a municipality as a whole, the municipality to distribute it through its own distribution system. In that case I did make specific use of the element of depreciation as entering into a fair price to be charged for the water.

Q. On page "518" of your deposition you have stated that some of the pipe in North Knoxville must have cost more than you have put in your estimate. You have in your possession papers showing exactly what it did cost, have you not?

A. No sir I have not.

Q. Have you not at Boston?

A. No sir. That pipe to which I referred is pipe that was laid in North Knoxville by the old company prior to the time when
1159 I became interested in the property; that is prior to December 1890.

Q. That is the pipe that you referred to?

A. That is the pipe that I referred to. That is the pipe that was acquired by Wheeler & Parks under contracts set out in the record of the Directors' meetings and which have been referred to in this deposition.

Q. Mr. Wheeler was there any body competed with you for the North Knoxville franchise?

A. Yes sir I think there was some competition for that franchise.

Q. Between whom?

A. I am not sure about the names of the parties General Pickle.

Q. Well was D. S. McIntyre one of them?

A. I am in doubt whether he was or not. There was competition, or a proposition made to the town of North Knoxville, also to the town of West Knoxville by other parties, and I don't think they were the same in each case. If it is important I will endeavor to learn who they were and tell you later.

Q. Well did you or your company compete for the West Knoxville franchise?

A. We were in negotiation and had under inquiry and investigation the subject of supplying the town of West Knoxville.

Q. Well you didn't get it, and the other party did didn't he?

A. That is the fact.

Q. Now Mr. Wheeler, upon the basis of your estimates, I would like to know just what you insist must be realized in order that you may have a fair return, according to your contention upon your investment or the investment of your people in this Water Company?

1160 A. As of that date?

Q. As of Sept. 30th 1902. Give the specific items annually that you think must be paid out of the revenues of the company?

A. According to my estimates, as I have introduced them in this deposition, the company should be enabled to realize, out of its earnings, the following sums, found on page "533" of my deposition:

Interest on $1,105,533.69 at 6%	$66,332.02
Depreciation on $876,983.18 annually at 2%	$17,539.66
And a contribution to a Contingent fund of not less than ½ of 1% per annum on $1,105,533.69	5,527.67
Making a total of	$89,399.35

that amount being the fair annual return upon the fair invested value represented by the plant and property as of September 30th, 1902, undiminished as to interest and contingent fund allowances; by renewals, replacements or accrued depreciation on the plant still remaining in use. That amount would be enhanced moreover hereafter by interest and depreciation on further additions to the plant and by accumulation of interest on accrued depreciation which is in the nature of a deficiency remaining to be satisfied; and diminished by reduction of interest on accrued depreciation to such extent as the amount of such accrued depreciation shall be refunded or repaid to the investors out of future earnings. I would add a matter to which I have before called attention, that there are certain elements of value beyond this limit represented by whatever would be a fair allowance to promoters, or for legitimate and proper promotion of the enterprise, or the various enterprises and plants merged into the present property, upon which however I
1161 have undertaken to fix no capital value.

I have also made an analysis apportioning to the common stock from year to year, what I have considered the entire amount of the fair reasonable invested value and charges to be satisfied out of earnings, which rest upon the common stock itself, in excess of all outstanding liabilities. That analysis consists simply in crediting to the company the fair invested values developed in my analysis, and interest thereon from year to year, as those values entered into the plant minus the actual amount of interest bearing obligations issued by the company each year, whereby the value in the common stock simply consists of the excess of the fair and invested values, above the actual amount of securities which the company had outstanding, and has been paying interest upon, plus interest upon that excess at 6%, upon which excess values no interest has been paid. That tabulation I will put into this case as a part of my answer to your question.

The tabulations referred to with explanatory data are as follows:—pages—

597 Table "A"
597 " "B"
597 " "C"
597 " "D"

The following Tabular Summary is designed to show the relation which has obtained from time to time between the Fair Amount of Capital upon which the Company was entitled to have a fair and reasonable net return from water rates, under the principles and estimates set out in my deposition, and the actual amount of interest-bearing liabilities outstanding at such times, respectively:

Year ending—	Total construction cost of fair amount of invested values in plant and property, including 20% allowances for administration, contingencies, and "going concern" (pp. 107 & 123); also accrued depreciation not refunded.	Corresponding am't of interest-bearing obligations fairly issuable by company upon the invested values in col. 2 at 90% of their face value.	Actual amount of interest-bearing obligations outstanding (per list furnished by treasurer).	Amount of interest-bearing obligations fairly issuable in excess of amount actually issued (excess of col. 3 above col. 4).
(1.)	(2.)	(3.)	(4.)	(5.)
December 31, 1883	$165,722.78	184,136.42	125,000.00	+ 59,136.42
1884	177,828.64	197,587.38	125,000.00	+ 72,587.38
1885	189,934.51	211,038.34	200,000.00	+ 11,038.34
1886	202,040.37	224,489.30	218,700.00	+ 5,789.30
1887	217,686.24	241,873.60	218,200.00	+ 23,673.60
1888	229,792.10	255,324.56	244,500.00	+ 10,824.56
1889	246,556.38	273,951.53	241,500.00	+ 32,451.53
1890	258,662.24	287,402.49	252,500.00	+ 34,902.49
1891	309,493.60	343,881.78	238,000.00	+ 105,881.78
March 31, 1893	328,623.86	365,137.63	255,500.00	+ 109,637.63
M'ch 31, 1894, Plus ¼ accretions*	363,559.86	403,955.40	434,500.00	— 30,544.60
1895, " ¼ "	492,826.17	547,584.63	547,600.00	— 15.37
1896, " ¼ "	544,137.40	604,597.11	582,750.00	+ 21,847.11
1897, " ¼ "	560,528.52	622,809.47	595,000.00	+ 27,809.47
1898, " ¼ "	566,853.30	629,837.00	599,500.00	+ 30,337.00
1899, " ¼ "	576,005.11	640,005.68	605,500.00	+ 34,505.68
1900, " ¼ "	768,225.21	853,583.57	763,500.00	+ 90,083.57
1901, " full "	864,684.05	960,760.06	824,500.00	+ 136,260.06
1902, Incl. add'l "	959,288.20	1,065,875.78	891,900.00	+ 173,975.78
6 mo. to Sep. 30, 1902, " " "	994,980.32	1,105,533.69	893,400.00	+ 212,133.69

NOTE.—The "Cost of Plant" preceding 1891 is accounted in Col. 2 above as invested in the years shown or assumed in my analysis, pp. 23–99, and given in detail, Table C, hereof.

*The "accretions" upon that part of the depreciation that was *complete* prior to M'ch 31, 1901, which were accumulating from 1893 to 1901, 8 years, are, for convenience, here included at ¼ of the total, $11,028.64 = $1,378.58, each year from 1894 to 1901.

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TABLE B.

"Amount of Interest-bearing Obligations Fairly Issuable in Excess of Amount Actually Issued" and the Accumulation of such Excess and Interest thereon; also the Distribution thereof upon the Common Stock from Year to Year.

Year ending—	Amount of interest-bearing obligations fairly issuable in excess of amount actually issued—(Col. 5 of Table A.)	One year's interest at 6%.	Interest accumulations at 6% upon all preceding amounts in Col. 3.	Sum of am'ts in col. 2, and interest accumulations in col. 4.	Shares of capital (common) stock issued.	Distribution of Amounts in col. 5 upon the common stock—per share.
(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)
Dec. 31, 1883	+ 59,136.42	+ 3,548.19	3,548.19	62,684.61	2,000.	31.34
1884	+ 72,587.38	+ 4,355.24	8,116.32	80,703.70	2,000.	40.35
1885	+ 11.038.34	+ 662.30	9,265.60	20,303.94	2,500.	8.12
1886	+ 5,789.30	+ 347.36	10,168.90	15,958.20	2,500.	6.38
1887	+ 23,673.60	+ 1,420 42	12,199 45	35,873.05	2,500.	14 35
1888	+ 10,824.56	+ 649.47	13,580.89	24,405.45	2,500.	9.76
1889	+ 32,451.53	+ 1,947.09	16,342 83	48,794.36	2,500.	19.52
1890	+ 34,902.49	+ 2,094.15	19,417.55	54,320.04	2,500.	21.73
1891	+ 105,881.78	+ 6,352.91	26,935.51	132,817.29	2,500.	53.13
15 mos. to M'ch 31, 1893	+ 109,637.63	+ 6,578.26	35,129.90	144,767.53	2,500.	57.91
1894	— 30,544.60	— 1,832.68	35,405.01	4,860.41	4,000.	1.22
1895	— 15.37	— 0.92	37,528.39	37,513.02	6,000.	6.25
1896	+ 21,847.11	+ 1,310.83	41,090.92	62,938.03	6,325.	9.95
1897	+ 27,809.47	+ 1,668.57	45,224.95	73,033.42	6,450.	11.32
1898	+ 30,337.00	+ 1,820 22	49,758,97	80,095.97	6,450.	12.42
1899	+ 34,505.68	+ 1,470.34	54,214.85	88,720.53	6,450.	13.76
1900	+ 90,083.57	+ 5,405.01	62,872.75	152,956.32	6,450.	23.71
1901	+ 136,200.06	+ 8,172.36	74,817.48	211,077.54	6,450.	32.73
1902	+ 173,975.78	+ 10,438.55	89,745.08	263,720 86	6,450.	40.89
6 mos. to Sept. 30, 1902	+ 212,133.69	+ 12,728.02	107,857.80	319,991.49	6,450.	49.61

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TABLE C.

Memoranda Showing Assumed Distribution of Additional Construction by Years Prior to 1891.

(Explanatory of Table A.)

Classification.	Total construction in 1891.	Deductions to find initial construction for years below.							Assumed original.
		1890.	1889.	1888.	1887.	1886.	1885.	1884.	1883.
1. Real Estate	11,650.00	.....	900.00	.....	2,950.00	.....	.....	.....	7,800.00
2. River Pumping Sta.:									
A. Engine Ho. & Pits	9,730.00	.....	.....	.....	.....	.....	.....	.....	9,730.00
B. Boiler Ho	1,060.44	.....	.....	.....	.....	.....	.....	.....	1,060.44
C. Tool Ho	161.40	.....	.....	.....	.....	.....	.....	.....	161.40
D. Chimney	2,238.74	.....	.....	.....	.....	.....	.....	.....	2,238.74
E. Coal Chute	543.31	.....	.....	.....	.....	.....	.....	.....	543.31
F. Store Ho.	289.80	.....	.....	.....	.....	.....	.....	.....	289.80
G. Engines	17,143.51	.....	.....	.....	.....	.....	.....	.....	17,143.51
G. Boilers	6,024.00	.....	2,982.00	.....	.....	.....	.....	.....	3,042.00
3. Reservoir	33,060.00	.....	.....	.....	.....	.....	.....	.....	33,000.00
4. Pipes	140,102.68	9,626.20	9,626.20	9,626.20	9,626.20	9,226.20	9,626.20	9,626.20	63,093.12
6. Meters, &c	1,696.20	212.02	212.03	212.02	212.03	212.02	212.03	212.02	
7. Tools, &c	2,000.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	
8. Pipes, No. K	32,271.25								
Totals	257,911.33	10,088.22	13,970.23	10,088.22	13,038.23	10,088.22	10,088.23	10,088.22	138,102.32
Add 20% (p. 107)	51,582.27	2,017.64	2,794.05	2,017.64	2,607.64	2,017.64	2,017.64	2,017.64	27,620.46
Totals	309,493.60	12,105.86	16,764.28	12,105.86	15,645.87	12,105.86	12,105.87	12,105.86	165,722.78
Assumed Initial Construction Cost, Dec. 31, of years stated.	309,493.60	258,662.24	246,556.38	229,792.10	217,686.24	202,040.37	189,934.51	177,828.64	165,722.78

1165 *Explanatory of Tables A and B.*

To such extent as the interest bearing obligations which the Company might properly have issued from year to year have been greater or less than the amount of such obligations actually issued and outstanding,—as shown in Column 5 of Table A, or Col. 2 of Table B, the sums of interest which the Company might properly have paid would likewise have been greater or less than the sums actually paid and charged against Profit & Loss account,—as of the times when such excesses or deficiencies occurred, respectively. Such additional sums allowable (but unpaid) each year for interest are shown in Column 3 of Table B.

The successive accumulations of all such differences of *interest*,—affecting that of each year by its proper sign,—compounded at 6 per cent., are shown in Col. 4 of Table B.

The several amounts of the said accumulations combined,—each according to its sign,—with the amount of such interest bearing obligations *issuable* in excess of the amounts outstanding, respectively, (Col. 2) are shown in Col. 5, Table B, which combined amounts represent values that, under this analysis, the Company was entitled, either to have capitalized at their full value, or refunded out of earnings. Such values are, so long as not refunded to the investors, or shareholders, merged into the value of the common stock.

Apportioning or distributing the said values in Col. 5 upon all the common stock outstanding from time to time, the proportionate value or distribution of each share upon that basis alone, would be as shown in Col. 7 of Table B.

For example, the apportionment per share as of September 30, 1902 is seen to have been $49.61 (Foot of Col. 7, Table B).

From the nature of the case this apportionment rests upon *"Fair Invested Values," plus a fair return thereon,* undiminished, by such actual reductions in physical value as result from and are represented by replacements and depreciation of plant and other necessary impairments of capital invested therein, so long as such impairments remain unsatisfied or not made good to the investors, that is, to the holders of said shares.

The said apportionments represent therefore values not based upon *earnings,* but *entitled to redemption* out of, or support by interest or dividends from earnings, and therefore to be taken into account in the determination of Reasonable Rates.

1166 Q. Well now how much would you add to this amount of $89,399.34 for the other matters you speak of?

A. Upon the 31st of March, 1902 the amount of interest bearing obligations, which according to my analysis the company was fairly entitled to have issued, to wit; $1,065,875.78, exceeded the actual amount of interest bearing obligations which the company then had outstanding, to wit; $891,900.00 by $173,975.78. (See next to last line of figures in table "A" page 597) The corresponding excess

on the 30th of September, 1902 I hav'n't yet determined. I would like to put it into this table before it goes into the record in order to complete the table, and the table which I put in shows the corresponding excess at the end of every financial year prior to that time. Computing the interest upon those amounts which the company was entitled to have interest upon plus the amounts themselves down to March 31, 1902, yields a total of $263,720.86 which apportioned upon the 6,450 shares of common stock then outstanding would make the distribution $40.89 as of March 31, 1902. (See next to last line in table "B" page 597.)

Q. Give it in round numbers, please?

A. The whole amount was $263,720.86. Now these amounts of course include all the accumulation of capital and interest thereon invested in the portions of the plant that had been discontinued and replaced, also the depreciation that has accrued upon the plant still in use, and my opinion is that by the time the present contract of the municipality shall have expired, the company would be entitled if it were possible for it to acquire it, to have out of earnings between now and the expiration of that contract a sufficient amount to refund to it, in cash, that depreciation, for the reason, as
1167 I have previously expressed it, that the company may not then be burdened with an unsatisfied demand upon future rates, that is rates that could only be earned after the expiration of the present contract, and to the end therefore that its invested values shall then be commensurate only with its physical plant. The amount necessary to be earned during this period between March 31, 1901, as I have computed it, and the expiration of the present contract, I have testified heretofore as being annually $15,929.70, found on page "185" and at some earlier stage in my deposition. Upon the amounts, which according to the distribution of values upon which no interest or earnings have been had, amounting to $40.89 per share March 31st last and $49.61 September 30th last, I consider that that stock is entitled to have earned a fair return upon that valuation. Now in what I have said, I have based my answer solely upon the question,—that is upon the values which I have already estimated. I have excluded from consideration both the valuation upon which the Company may have issued its stock and also the value upon which the present holders of the stock acquired it.

Q. Now I understand, I think very well that you consider $89,399.34 as essential to be paid out of the revenues of the company as a reasonable return to the investors upon investments, and that some additional sum per annum should be paid. Now what I want to get at is the amount of that additional sum per annum in round numbers—an estimate of it.

A. Well I have testified to that; in addition $15,929.70 annually from March 31, 1901 to the expiration of the present contract, and I say from that time because the demand upon future earnings is increasing from year to year and that element I have not computed as of any time subsequent to March 31, 1901.

Q. Now adding the two together makes what sum Mr. Wheeler?

1168 A. $89,399.34 plus $15,929.70 equals $105,329.04.

Q. Of course the plant to be self-sustaining must yield in addition to this amount its operating expenses and taxes?

A. Yes sir.

Q. What do you estimate the operating expenses and taxes at?

A. I make no estimate on them, as I don't have to do with the details of them.

Q. Your bill estimates them at $35,000.00 per annum. This added would make $140,329.00?

A. Yes sir.

Q. And you would add taxes to that?

A. If taxes are not included.

Q. Well what do you estimate taxes at?

A. I don't estimate them.

Q. Didn't you state yesterday that you paid more taxes than you got hydrant rents?

A. Yes sir, but I was testifying from hearsay.

Q. In round numbers, according to your estimate, this plant would have to yield a revenue of $150,000.00 to be self-sustaining?

A. To be self-sustaining and restore to investors the capital they have invested, and that would have to become disused or represented by depreciation up to the time of the expiration of the present contract with the city of Knoxville. (See explanation p. 602 post.)

Q. Who figured the rates established April 1st 1895?

A. Well I think I was one of the committee that prepared those rates.

Q. Your water services are more than double now what they were in April 1895?

A. You mean the number of services?

Q. Yes sir.

1169 A. I think they are.

Q. You have four or five times as many meter services now than you had in 1895, or even more than that?

A. I think so; they chiefly replace fixture service however.

Q. Since 1895 you have taken in the Lonsdale-Beaumont Plant, which I believe you stated was a self-sustaining and prosperous plant at the time you purchased it?

A. No sir I didn't use that phrase. I said I thought it was a plant that justified the purchase price, and since then we have taken it in.

Q. Have you not stated heretofore in this deposition that it was self sustaining at the time you purchased it?

A. Well I think I stated I thought it repaid the interest on the purchase price.

Q. Assuming that your present revenues, operating under the rates fixed by your company as of April 1st 1895 is in the neighborhood of $100,000.00 what per cent. increase would be required on those rates in order to meet the demands for a fair return on this investment according to your estimates?

A. To yield the return of $150,000.00 a year?
Q. Yes sir.
A. Well I am unable to say for the reason that it is impossible to say how far the patronage of the company would be affected by an increase in the rates. Of course if the same patronage continued unaffected by an increase of rates, it is a very easy sum in arithmetic to see what increased rates would be necessary, and that increase would be approximately fifty per cent., but it is also well understood that an increase in rates to that extent might materially
1170 diminish the water consumption.
Q. And in that respect the per cent. would be larger?
A. No sir it might be the reverse. It would be possible to increase the rates to such an extent as to practically cut off all revenues.
Q. That is the question I ask you; that if you diminish the service the per cent. on rates would be larger than 50%?
A. No sir.
Q. If the consumption should be decreased by increasing the rates then the percentage would have to be larger than even 50% wouldn't it?
A. No sir I don't so understand it.
Q. Assuming that the present rate of consumption remains, it would require an increase of 50% wouldn't it to meet the demands according to that estimate?
A. Approximately.
Q. Now if the increase operated to diminish the consumption of water, the per cent. of increase on rates would have to be greater?
A. To yield the revenue you mean?
Q. Yes sir.
A. I am not so sure of that.
The COMMISSIONER: You don't understand each other. The witness means that the rates of the company might be increased to such an extent that there would be no revenues to the company.
(The WITNESS:) On further reflection I find that taxes were included in the operating expenses of $35,000.00 more or less referred to in the bill, which would make the total requirements on revenue about $140,000.00 instead of $150,000.00 per annum. In answer to one of General Pickel's questions I desire to say I find that the company saves by depositing its ashes upon the land which it bought instead of having them carted away the sum of $91.25 a year.

1171 Redirect examination by Mr. CALDWELL:

Q. Mr. Wheeler, in the Danvers case you have spoken about, you have said that you were a Commissioner. What were the duties of a Commissioner in that case; I mean not the actual things he did, but what was the function which he performed?
A. A Board of three Commissioners was appointed by the Superior Court under a special act of the Legislature of Massachusetts to determine the price which the Commonwealth should pay to the town of Danvers for water service to its Insane Asylums, the award of the Commissioners to be subject to the approval of the Court.
Q. Do I understand that you were one of the Commissioners appointed under that Act?

A. I was.

Q. You have ben asked in regard to the Dover and Foxcroft case; was that case terminated?

A. That case was terminated.

Q. Has it been before any of the courts?

A. That has not been before the courts subsequent to the award of the tribunal, the municipal corporation or fire district having accepted the works at the price found by the tribunal, and the company having made conveyance thereof. That was closed last month.

Q. Was the lot sold to M. D. Arnold, referred to above in your deposition, a part of the real estate which the company was required by its original contract in 1882 to take and pay for?

A. I think it was a part of the land acquired in connection with that transaction with the City.

Q. In establishing water rates and regulations in April 1895, was regard had solely to conditions existing at that time, or also
1172 to conditions that might thereafter arise?

A. Regard was had more entirely to future conditions than conditions as of that particular time. It was supposed at that time by the company, and never had been doubted by it that its right to fix and establish water rates was limited solely by the limitation placed in the original contract between it and the city, to-wit: not exceeding 5 cents per hundred gallons, and in fixing those rates the company, so far as I am able to interpret its intentions, aimed to establish a rate which it would be entitled to continue to charge indefinitely for the future, or until it should agree to some modification thereof with the city.

Q. You stated yesterday in answer to a question by General Pickle as nearly as I can recollect it now, not having the question before me, that the principal reason in your judgment for the unsatisfactory condition of the property of the company in 1890 when you purchased it—the principal difficulty that it encountered for a number of years thereafter was its inability to finance itself in the usual way. I will ask you to explain your meaning a little more fully than you did in that answer?

A. When we became interested in this property in 1890 as I stated yesterday the pumping machinery of that time, which by the way not in duplicate—there was no auxiliary pumping machinery to use in case the main machine fell down for any reason—the capacity of that pumping machinery had already been reached by the consumption of water at that time. The water itself was in a very unsatisfactory condition, being river water without purification or clarification. There was an active demand for the extension of the service which it was the policy of the company to avoid so
1173 far as it could possibly do so without running counter in an excessive degree to public demands. There was need of various other improvements, none of which could have been made without the investment of substantial amounts of additional capital. The company had endeavored, I was advised, to secure an increase of the limit of bonds which it might issue in order that it might avail itself of the usual resources of obtaining capital, that is upon a pledge of the security of its property, but that effort had failed.

Immediately after Wheeler & Parks became interested in the property, they renewed the effort to interest the city in the removal of that limitation as to the amount of bonds which could be issued, and submitted a draft for an ordinance to the City Council within three months after they became interested in the property—in the month of February 1891—but that ordinance, as I stated while passed by the City Council was vetoed by the Mayor. During that same year Wheeler & Parks, moved by considerations to which I referred yesterday, sought and obtained an independent franchise from North Knoxville, and endeavored under that franchise to lay foundations for the building of a new pumping station for the supply of both North Knoxville and the old City, as under that franchise they would have been able to have pledged the security of all capital invested thereunder, but in that they did not succeed. As I have stated they sought to secure a contract with West Knoxville, thinking that an increase of the interests they represented might ultimately result in making an interprise of such importance and magnitude that they would be able to satisfy a need which they considered primarily a need of the community, but in that they failed.

When the next City Council came in in 1893, they renewed
1174 their negotiations, and I personally (on behalf of the company at that time as were the negotiations of 1891 in behalf of the company) submitted a draft for an ordinance to the City of Knoxville which was first made acceptable to the Committee on Water before its presentation to the City Council, and was passed by the Council. That ordinance was vetoed by the Mayor and was withdrawn by us from action by the Council upon the Mayor's veto, because in the meantime the legislature had cut off the 10th Ward in which a substantial part of the extensions specifically provided for in that ordinance were to have been made. Following that, Wheeler & Parks canvassed, with some care, the history of the conditions that had obtained during the preceding three years, and made a report to the Directors thereon, and submitted in that report fully the considerations by reason of which it became necessary that the company should look to other measures for raising money for financing and extending the works. That report was addressed to the Directors under date of June 26, 1893 and the original I have here, filed with the transactions of the Directors, and upon receiving that report at a meeting of the Directors June 29th 1893, a committee was appointed by them to take into consideration the recommendations of that report and the plan for carrying said recommendations into effect. That committee reported at a subsequent meeting of the Directors held July 6, 1893, and at that meeting the President was authorized and instructed to call a meeting of the stockholders to consider and act upon certain matters specifically set out by vote. Those matters comprised "the amendment of its Articles of Incorporation, the increase of its Capital Stock, the making of any of its shares preferred, and the amendment of its by-laws, or the adoption of a new Code of by-laws." Subsequent to that meeting a
1175 careful search was made to determine whether there were any by-laws and as to whether the capital stock had ever been

definitely fixed, and that search failed to disclose that there had ever been any by-laws adopted or that the limitation of the capital stock had ever been fixed. The meeting of the Stockholders provided for in that vote was duly called, and that is the meeting, a record of which has gone into the transcript in this case, being found on pages "5 to 21" inclusive of the Stockholders' records, it being the meeting at which the by-laws were adopted, the capital stock fixed and the status of the preferred shares determined. The preferred stock, by the way was in the nature of an interest bearing obligation to the company, redeemable at any time in cash at its face value. The Directors were empowered to carry into effect the increase of capital stock, or the issue of additional stock, and the opportunity to subscribe to that stock, both common and preferred, was submitted to every holder of stock whose address was known. The form of that submission, and the names of the stockholders to whom it was sent, appear in the files of the Directors between pages "56 and 57"; and at a meeting of the Directors held November 9th 1893: "The Treasurer reported that in accordance with the votes of the Directors, passed October 30 last, he had notified each stockholder of this option to subscribe for additional stock, by mailing or handing to each one full instructions in relation thereto, together with blank forms for subscriptions, all in accordance with a certificate of that fact, by him subscribed, and submitted to the meeting, and that no subscriptions had been received for stock by any stockholder, nor had any expressed his intention to subscribe for any of the stock."

1176 Then a committee was appointed to confer with the firm of Wheeler & Parks to consider upon what terms they would undertake to finance the improvements of the company, and that led to the contract between Wheeler & Parks of November 17, 1893 which is in this case.

Recross-examination by Mr. PICKLE:

Q. Mr. Wheeler, at the time Wheeler & Parks purchased a controlling interest in the Knoxville Water Company, they knew that the city of Knoxville had, in its contract with that company reserved an option for the purchase of the plant, did they not?

A. I think they did.

Q. You were likewise cognizant of the fact that there was a provision in that contract limiting the bonded indebtedness of that company to $150,000.00?

A. I think I was.

Q. And the city refused to extend the limit of that bonded indebtedness on more than one occasion?

A. They failed to assent to it.

Q. And do you not know that it was for the purpose and reason that they did not want to embarrass the option they had on the purchase of the plant, or to have innocent bondholders involved in any controversy that might arise thereafter?

A. No, sir, I did not know that.

Q. What did you understand the reason to be then?

A. Well, if I have to be frank and give you an answer, it would

be quite a different answer from that. I think the reason was of a very different kind.

Q. Didn't you understand Mr. Wheeler that the limit on the bonded indebtedness was placed in there to protect the city's option to purchase the plant?

A. No, sir, I cannot say that I did, but I think some had that idea, but upon that point the company took the option of counsel to the effect that that provision in the contract, even if removed would not have affected in any way the city's right, under
1177 that contract to take the works at the price to be determined in the manner therein stipulated regardless of what kind or amount of securities the company might have issued.

Q. But the City declined to accept your opinion or counsel's opinion upon that point?

A. The City failed to pass the ordinance.

Q. Then your company proceeded with those other arrangements in order to get around that limitation upon the bonded indebtedness of the company?

A. Yes, in order to provide other means to secure the necessary capital.

Q. These other arrangements were done without any knowledge of the City or their counsel, were they not?

A. So far as I know they were.

The further taking of this deposition was adjourned until Friday Morning, December 12, 1902, at 9:30 o'clock A. M.

SATURDAY MORNING, *December 13th*, 1902.

The further recross-examination of the witness resumed.

Recross-examination by Mr. PICKLE:

Q. When did you state that the firm of Wheeler & Parks was dissolved?

A. By agreements dated February 1, 1894.

Q. The construction of the North Knoxville Plant, or the accounts of the construction of the North Knoxville Plant would appear on their books entirely, would it?

A. Yes, sir.

Q. But a portion of the construction done by you under the contract of 1893, that portion of it done since the dissolution, would appear upon the books of William Wheeler would it not?

1178 A. Well, upon books that remained in the possession of Wm. Wheeler and which were either the same books that were opened by Wheeler & Parks or succeeding books added thereto by Wm. Wheeler. I think all the work done under that contract appears in the books that were originally opened by Wheeler & Parks.

Q. Now, Mr. Wheeler, in view of the fact that you have made an estimate without reference to the original figures in your possession and the cost of material, &c., entering into this construction work in North Knoxville, and into the filter and high pressure plant and

other parts of the works in the city which were constructed under the contract made with Wheeler & Parks in 1893, and in view of the other facts that it has just been stated by your brother that there is no data with reference to this construction work upon the books of the Water Company, I ask you now again to produce the original, or furnish copies of the books of Wheeler & Parks, or of Wm. Wheeler as successor to Wheeler & Parks for the purpose of your cross examination in this case?

Mr. CALDWELL: The Master has repeatedly ruled that this question is inadmissible and counsel for the plaintiff excepts to it and asks that the witness be relieved from any further reiteration of the statement in this question.

COMMISSIONER: My ruling is the same as it has been and the exception of the plaintiff is the same.

Mr. PICKLE: We except to the ruling of the Master.

Q. Mr. Wheeler, in the exhibit to your deposition, denominated "Distribution Pipes and Appurtenances outside the corporate limits of Knoxville as said city existed on March 31, 1901," in the
1179 note you state that "Items marked "A" were laid or assumed by the City of Knoxville when this territory forming a part of said City, to have been laid to supply public fire hydrants." I want to ask you what you mean there by the words "or assumed by the City of Knoxville when this territory formed a part of said City, to have been laid, &c.?"

A. To the best of my recollection that refers specifically to some distribution pipes that had been laid in the territory afterwards made the 10th Ward of the City of Knoxville, lying to the eastward of North Knoxville. After that territory was made a part of the City, the City ordered, under the terms of the contract, a certain number of public fire hydrants in the 10th Ward, the general provision of the contract being that the Water Company was, or might be required to lay certain amounts of pipe per hydrant so ordered by the City. The City accepted as part of the pipe which the company was required, or might have been required to supply, some of the pipe which had already been laid in that territory, on which pipe (Besides the service for private consumers) certain fire hydrants had already been set and supplied with water for fire protection under an arrangement made with the residents along those streets. The items marked "A" referred to in the note to which you call my attention comprise such pipes that had previously been laid by the Water Company and that were accepted by the City, and also additional water pipe laid at that time to supply in part the hydrants ordered by the City of Knoxville in the 10th Ward.

Q. Then this pipe was laid before the 10th Ward was taken into Knoxville?

A. A certain part of it was but not all of it.

Q. And afterwards the City directed or authorized the
1180 putting of fire hydrants on it?

A. Yes, sir, the city accepted it as being the pipe which

the Water Company was required to provide under its contract to supply the hydrants then ordered by the city.

Q. What size pipe was that, Mr. Wheeler?

A. The pipe are of various sies, from 8″ to 4″ in diameter—most of it 8″ and 6″ pipe.

Q. On what size pipes were the hydrants placed?

A. Generally on 8″ and 6″ pipe. I am unable to say absolutely whether all hydrants were on that size pipe or not.

Q. On what size pipe were the hydrants placed in the old city?

A. They are placed upon various sizes; I am unable to tell you how many upon each size.

Q. Now you speak of the city accepting the pipe. What action of the city do you refer to, and file a copy of it please?

A Well, I will endeavor to find the documents—I haven't them at hand now—and file them if you desire. My impression is that the transactions with the city consisted in the passage of an ordinance ordering additional fire hydrants to be set upon streets stated therein, and that the Water Company then proceeded to lay the pipes and set the hydrants in conformity with the order. I am not at present aware whether there were any further evidences or transactions or not, except as appear in the plans and surveys of the Water Company. Those plans which I have shown and filed as an exhibit in this case show the sizes of the pipe and the various streets and hydrants supplied thereby.

Q. Will you get an authority of the acceptance by the city and file it as an exhibit to your deposition.

Mr. CALDWELL: I don't know that we are compelled to furnish that.

Mr. PICKLE: I object to the witness stating orally the re-
1181 quirements of the city.

(The WITNESS:) I might add that I understand that the acts of the city appear upon its records, and that they are open to counsel to obtain access to, or copies of them.

FRIDAY, *December* 19, 1902—2 o'clock p. m.

The further recross-examination of WM. WHEELER resumed.

Q. Mr. Wheeler have you among your books and papers plans and specifications of the buildings erected by the old company or the present company?

A. I have complete plans of all buildings designed and erected since I became interested in this work.

Q. Have you any plans of the old buildings?

A. Of the old buildings I had some measurements made.

Q. Are those here, Mr. Wheeler, so that they will be accessible?

A. I am not quite certain. There are certain blue prints here which I have sent to Mr. Kimball, but as to what he has here I am not quite certain about.

Q. I will ask you, Mr. Wheeler, to give so far as you have them, plans and specifications of the buildings either erected by the old

company or by the present company, including pits and such other work as is done by plans and specifications, in order that our expert may examine not only the work itself, but the plans and specifications under which it was done?

Mr. CALDWELL: We object to the question.

A. Such plans of the buildings as have been prepared and furnished for the guidance of the company's Superintendent in the erection of those buildings and as may be furnished by him, or by the company, we offer and they are at the disposal of the de-
1182 fendant. If plans of any of the buildings or structures erected by the Company are missing from the Company's files, so far as they may be furnished from tracings, or by copying from the originals in my office, they will be furnished at the cost of reproducing them. If the expert for the city desires to use such plans and cares to do so in my office, he will have the opportunity freely and without charge.

Q. How far is your office from Knoxville where you have those plans?

A. It is in Boston, Mass.

Q. And you decline to send them here for inspection?

A. Yes, sir, that is my practice invariably with reference to any call for original papers made at my office.

Q. And you decline to furnish copies except at the expense of the City?

A. I think I am bound to do so, in the interest of my office and of the integrity of my files. I do this for the reason that the plans in my office to which I refer are my private property. They are professional papers, copies of which have been furnished the Knoxville Water Company as my client, and the duplication thereof would be a matter of serious expense to me, as would also any loss of or injury to the originals.

Q. Mr. Wheeler, have you any of the plans of the old buildings which have been removed, showing their dimensions or any specifications showing their construction?

A. I have no specifications. I think I have diagrams or sketch plans showing the dimensions of the old building and inasmuch as that building is not in existence, I will undertake to furnish you copies of whatever I have relating to that.

Q. Was there more than one of the old buildings?

1183 A. Well, there was only one pumping station and boiler house upon which I have estimated in my analysis. There were one or two minor buildings which have been removed, but I could not give you any further description of them by plans than is contained in the notes in my deposition describing their sizes and the materials of which they are constructed.

COMMISSIONER: I hold that what Mr. William Wheeler has offered is as fas as I will compel him to go.

And further deponent saith not.

—— ——.

1184 FRIDAY MORNING, *December* 12, 1902.

Depositions continued.

General ELBERT WHEELER, next witness of lawful age, being first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. General Wheeler, where do you reside and where is your place of business?

A. My residence is Nashua, New Hampshire; my place of business is Boston, Massachusetts, #14 Beacon Street.

Q. What is your occupation?

A. I am Treasurer of various corporations.

Q. Are you a stockholder in the Knoxville Water Company?

A. I am.

Q. Are you an officer of the Knoxville Water Company?

A. I am Treasurer of that Company.

Q. How are you related to Mr. William Wheeler, the President of the Company?

A. I am his brother.

Q. How long have you been treaaurer of the Knoxville Water Company?

A. Since 1891, I think.

Q. Did you become Treasurer at the time that Messrs. Wheeler & Parks purchased a controlling interest in the stock?

A. Directly afterwards.

Q. Were you a member of the firm of Wheeler & Parks?

A. No sir.

Q. Who has had the custody of the books of the Knoxville Water Company—I mean the books of account since you became the Treasurer?

A. I have sir.

Q. Are the books in Knoxville now?

A. Yes sir.

1185 Q. Are you competent to testify concerning the contents of the books?

A. I think so sir.

Q. General Wheeler what was the gross revenue derived by the Knoxville Water Company from its entire plant inside and outside the limits of the city of Knoxville proper, under the regulations established by the company, and in effect at the present time, also what would have been the gross revenue of the company from its entire plant inside and outside the city limits for the year ending March 31st, 1901, under the operation of the ordinance of the City of Knoxville passed March 30th 1901; also what was the gross revenue of the Knoxville Water Company in the City of Knoxville proper under its own rates for the year ending March 31st 1901, and what would have been its gross revenue in the city of Knoxville proper under the provisions of the ordinance of the city of March 30th 1901, assuming that the difference in income is proportionate to the

difference in the rate schedules under the Company's rules and the city's ordinance?

A. *Earnings and Expenses April* 1, 1900 *to March* 31, 1901.

Entire Plant, Actual Water Collections		$88,481.39
Annual Income on basis of City Ordinance Rates March 30, 1901		70,857.75
Fixtures and Meters, $77,026.39—22.88%	59,402.75	
City Hydrant Account	11,455.	
City Proper, Collections, $88,481.39 less 10,333.08		78,148.31
Per City Ordinance		63,342.40
Fixtures and Meters, $66,693.31—22.2%	51,887.40	
City Hydrants	11,455.	

Q. Having answered the question last propounded, please state also what the expenses of the entire plant were during the year beginning April 1, 1900 and ending March 31, 1901; also
1186 what the expenses pertaining to the plant for the city proper were during the same year?

A. Expenses in same period, entire plant..... $35,775.89
Expenses in same period, city proper..... 33,834.96

Q. In making these estimates, proportioning earnings and expenses between the city and the suburbs, what proportion of the entire expenses do you assign to the suburbs, or to that part of the plant which lies outside of the city proper?

A. The expenses properly chargeable to operation outside of city limits, according to my estimates and calculations, amount to $1940.93, the difference between the two items of gross expenses in the tabulation presented. This has not been reduced to a percentage basis.

Q. Is there any part of the physical property situated outside of the city limits which serves the city proper?

A. Yes sir.

Q. Are you able to state what percentage of the entire property does not in any way serve the city proper?

A. 12.29% as I understand it.

Q. Of what date is that now?

A. March 31, 1901?

Q. March 31, 1901.

A. Yes sir if I correctly understand your question.

Q. In determining income on the entire plant on the basis of the city ordinance rates, how did you proceed?

A. We *rated* every service in use March 31, 1901, and charged therefor at the city's ordinance rates, then multiplied the amount thereof by "4" to determine the total annual charge under the city's ordinance rates. The amount derivable from metered services, was determined by taking the quantity of water charged for on
1187 each bill rendered March 31, 1901, and multiplying this quantity by either "4" or "12" as the bill may have been

rendered for a quarter or a month, by which to determine the quantity of water for a year and applying the city's ordinance rate thereto respectively. Charges for meter rental were likewise made by charging the yearly rate against each meter according to its size in accordance with the rate prescribed by the city's ordinance.

Q. General Wheeler I wish you would give the stenographer in figures the difference between gross income for the entire plant for the year ending March 31, 1901 under your regulations and under the city ordinance?

A. The actual collections from the entire plant under the Water Company's schedule were..... $88,481.39
The income which would have been derived from the same service rendered, if assessed upon the basis of the city ordinance rates by the method previously described would have been..... $70,857.75
the city hydrant account remaining, and being accounted the same in both computations.
The reduction in gross revenue which would thus result from the operation of the rates prescribed by the city's ordinance would have been..... $17,623.64

Q. Please apply the same question to gross earnings within the city proper?

A. By the same method of calculation the gross collections by the Water Company's schedule within the city limits were..... $78,148.31
Such collections under the city ordinance rates by the method of determination above stated would have been $63,342.40
1188 That i- $14,805.91 less than by the Water Company's schedule.

Q. I note that you state that the expenses for the entire plant for the year from April 1st, 1900, to March 31st, 1901, was $35,775.89?

A. Yes sir.

Q. And for the city proper $33,834.96?

A. That is correct.

Q. Please say whether or not you have distributed the expenses under the different headings under which the accounts are ordinarily kept, and if so state the expense for the year from April 1st, 1900 to March 31st, 1901 under said several items; first, for the entire plant and then for the city proper?

A. The several subdivisions of operating expenses are the ordinary sub-divisions as kept upon our books, and the sum total of such expenses to wit, $35,775.89 is made up of the following items.

	Entire Plant.	City Proper.
Alum,	$1310.78	$1157.68
Expense,	2976.16	2916.64
Fuel,	5431.15	4796.79
Insurance,	564.43	547.17
Filter Station,	2270.28	2247.58
Pump station,	3948.19	3908.71
Repairs,	3287.82	3074.11
Salaries,	7805.06	7024.55
Taxes,	8182.02	8161.73
Totals,	$35775.89	$33834.96

My computation of the several items entering into aggregate expense in city proper is made up as follows:

The cost of alum is assumed to be proportional to the
1189 revenue derived from water (all of which is filtered) paid for within city limits, namely, 88.32%, and by such computation the alum charged for used in the City proper is, $1,157.68, as shown on the list. The cost of fuel is computed in the same way and by the same percentage.

The proportion of "Expense" charged to operations within city limits, 98% is based upon the fact that no greater reduction than 2% of the total would be saved if the outside business were cut off. The extra expenses chargeable under this head of doing outside business, being nothing material beyond percentage, stationery and printed bills incident to the number of services outside of city limits, viz.: 311 on this date.

All of the disbursements for Insurance were incident to the property within the city limits, excepting approximately 10% of items $172.61 paid for Casualty insurance upon the construction of new mains, services, &c. said 10% being a fair estimate of such work outside of city limits.

"Filter Station" item charged to City proper (99%) would not be reduced beyond 1% if outside business be cut off, said 1% being ample to cover cost of oil waste and reduced period of artificial lighting incident to reduced pumpage and filtration.

In regard to "Pumping Station" account, the same statement is applicable.

"Reapirs" account, chargeable within City limits, 93.5% is determined by charging thereto the same percentage of total Repairs account as the property used for the operation of the plant within the City limits, viz.: 93.83% bears to the total property used in the operation of the plant. For convenience, 93.5%, is made the basis of such division.

1190 Salary account, chargeable within the city limits, is determined by deducting from administrative salaries the amount of $271.94, determined by the percentage derived from income for water outside of city limits, and the further deduction of salary paid one clerk in the Knoxville office of $469.50. These two items ap-

proximating 9.5% of the entire salary account. 10% is deducted for convenience and to amply cover any other proper deductions.

Taxes properly chargeable within city limits, are the entire amount paid excepting $20.29 paid upon real estate outside the city limits not used for the operation of the plant within said city limits, because the valuation by the county Assessor is taken as the basis of the city assessment without deduction, except for real estate outside of city limits as above set forth.

Q. General Wheeler what was the amount of interest on its debt of all kinds, paid during the year from April 1, 1900 to March 31, 1901, and chargeable against the entire plant?

A. Interest on bonds and floating debt, not including preferred stock was $30651.89.

Q. How much was the interest for that period on the preferred stock?

A. $17700.00.

Q. What was the amount of interest for the same year which is chargeable to that part of the plant within the city proper?

A. As 87.71% of the property of the company was located within the city limits, I would say that that percentage of the entire interest disbursements was properly chargeable upon the property within the city limits, viz.; $26884.77, interest on bonds and floating debt.

Q. And what would be the proportion of interest on the preferred stock chargeable to the plant?

1191 A. $15524.67 interest on preferred stock.

Q. Have you prepared a statement similar in form and in contents to the one in regard to which you have just been testifying, showing earnings and expenses from April 1st. 1901 to March 31st. 1902?

A. I have. It is as follows:

Earnings and Expenses April 1, 1901, *to M'ch* 31*st*, 1902.

Entire plant, Actual water collections.....	$95,452.12	
Annual income on basis of Ordinance of March 31st. 1901.....	76,233.58	
Fixtures and meters $83997.12, 22.88%.....	$64,778.58	
City hydrant account.....	11,455.00	
City proper, collections, $95452.12 less 14,435.36.....		$81,016.76
Per city ordinance.....		65,574.05
Fixtures and meters $69561.76 22.2%.....	54,419.05	
City hydrants.....	11,455.00	
Expenses in same period entire plant.....		37,003.25
" " City proper.....		34,962.02

	Entire plant.	City proper.
Alum.....	$1494.98	$1268.93
Expenses.....	2528.28	2477.71
Fuel.....	35091.81	2979.13
Insurance.....	238.19	238.19
Filter station.....	2561.46	2535.85
Pump station.....	4603.74	4557.70

Meter maintenance and repairs..	1084.08	1029.88
Repairs.....	2924.79	2676.18
Salaries	8391.82	7552.64
Taxes.....	8509.76	8489.47
Water rates, litigation.....	1156.34	1156.34
	$37,003.25	$34,962.02

Interest on bonds and floating debt. Ent. plant..... 30,070.57
" chargeable within city proper 26,374.90

1192 Q. What would have been the amount of reduction in gross income from the entire plant during said year from April 1, 1901 to March 31, 1902, if the ordinance of the city of March 30, 1901 had been in effect?

A. $19218.54.

Q. Please apply the same question to reduction under said ordinance for said year within the city proper?

A. Such reduction would have been $15,442.71.

Q. You have stated the expenses during the year now under consideration for the entire plant at $37,003.25, and for the city proper at $34,962.02. Did you make the apportionment to the city proper upon the same basis and by the same method as you made it for the preceding year?

A. The reasoning by which the computations were made during this year were substantially the same as in the preceding year, but the percentage applicable vary in apportioning the items which I will indicate: the division of the alum account in the first year, viz.; in the year ending March 31, 1901 was proportioned to the percentage of revenue from water sold within the city limits, viz.; 88.32%. This percentage in the following year ending March 31, 1902 was decreased to 84.88%, and that percentage of the total alum charge is made applicable to alum used for water furnished within the city limits.

The percentage charged for fuel within city limits is estimated upon the same basis. In the Expense account the same percentage is used as in the previous year. In Insurance all of it was incident to property and business within the city limits. Filter Station expenses make use of the same percentage as in the previous year. Pump Station the same. Meter maintenance and repairs are
1193 now kept distinct as a new account. Those chargeable within City limits are assumed to be proportional to the number of meters inside the City limits, viz.: 94.54%. For convenience we call it 95%. Repairs account chargeable within City limits, by the same reasoning as applied in the preceding year, is estimated to be 91.5% of the whole. Salary account items are determined as in the previous year, and the same percentage more than covers actual allowance. Taxes are determined exactly the same as in the previous year. "Water Rates Litigation" a new item, is all chargeable to operation within City limits, for obvious reasons.

Q. The interest on bonds and floating debt chargeable to the en-

tire plant for the year now under consideration, is according to this statement $30,070.57. As I understand you, from what you said in regard to a former statement, that does not include interest on preferred stock?

A. It does not.

Q. Please add to that the amount of interest on preferred stock for that period chargeable to the entire plant?

A. $17,439.17.

Q. The interest on bonds and floating debt chargeable to the plant within the City proper within this year is shown to be $26,374.90. Please add to that the proper proportion of the interest on the preferred stock?

A. Such interest on preferred stock is $15,295.90, which added to the $26,374.90 makes $41,670.80.

Q. Have you prepared a statement similar to the one in regard to which you have just been testifying, covering earnings and expenses from April 1, 1902 to September 30, 1902, and if so, please give the same to the stenographer?

1194 A. It is as follows:

"*Earnings and Expenses April* 1, 1902, *to Sept.* 30, 1902.

Entire Plant, Actual Water Collections		$50,155.50
Semi-annual income on basis of Ordinance of March 30, 1901		39,990.37
Fixtures and Meters $44,428.00—22.88%	$34262.87	
City hydrant account	5727.50	
City proper, Collections, 50,155.50—7,099.80		43,055.70
Per City Ordinance		34,769.04
Fixtures and Meters, 37,328.20—22.2%	29,041.54	
City Hydrants	5,727.50	
Expense in same period, Entire Plant		20,604.58
" " " " City proper		19,523.30

	Entire plant.	City proper.
Alum	$575.00	$493.58
Expense	1,168.62	1,145.25
Fuel	1,456.91	1,250.61
Filter station	1,074.34	1,063.60
Insurance—90–1	102.50	102.50
Pump Station	1,987.70	1,967.82
Meter Maintenance and Repairs	809.31	768.85
Repairs	1,804.92	1,651.50
Salaries	4,355.54	3,820.00
Taxes	6,008.70	5,998.55
Water rates Litigation	1,261.04	1,261.04
Totals	$20,604.58	$19,523.30

1195 Q. This statement last set out covers a period of six months, being the first half of the current fiscal year?

A. Yes sir.

Q. Is it fair to assume that the results for the entire year may be ascertained approximately in advance by doubling these several items; if not, what elements are there in the statement that are liable to variation?

A. They would indicate only approximately results which would definitely appear at the end of the fiscal year. The "Tax" item shown on this statement for six months, is one-half of the annual assessment, and to that extent, is correct. The income is not accurately indicatice of the business of the fiscal year, as additional services are likely to be installed in the current six months, and our examination of the income resulting from the use of meters as compared with the income obtained by charging at fixture rates the services—which, within the past year and a little more have been metered, seems to make clear that the Company suffers a loss of income from the application of meters to domestic services to which they have recently been largely applied. Outside of these two elements, no consideration now occurs to me which will materially affect the basis set forth in the statement of earnings and expenses.

Q. General Wheeler, what is the tax assessment of the Knoxville Water Company January 10th 1902, or for the current year? Also for the preceding year?

A. Taxes for the year 1900-1 State & County..... $283,400
" " " " " City $208,600
" " " " 1901-2 State & County..... $285,500
" " " " 1901 " City $284,030

1196 Taxes for the current year, beginning April 1, 1902 to the year 1903: State and County..... $395,200
City $393,500

Q. At all events, according to the statements you have filed, you paid taxes during the fiscal year April 1, 1901 to March 31, 1902, $8509.76?

A. That is correct sir.

Q. And what for the current fiscal year?

A. The taxes paid, and assessed to be paid during the current fiscal year amount to $12,017.40. It is proper to state that both of these accounts include amounts paid as privilege taxes.

Q. I will ask you to state the indebtedness of the Company now on the 30th day of September 1902?

A.—

First Mortgage Bonds.....	150,000
First Consolidated Bonds.....	411,000
Capital Stock, Pr-ferred	275,900
Capital Stock, Common	645,000
Notes Payable	37,500
Elbert Wheeler, Treasurer.....	19,000
Depreciation Fund, Re-invested in Plant.....	36,391.53
Making a total of.....	$1,574,791.53

It is proper to state that the Depreciation Fund is the same amount as appears in the statement for the fiscal year ending March 31, 1902, for the reason that the books of the Company have not been closed since that date, and will not be until the end of the current fiscal year, viz: March 31st, 1903.

Q. The First Mortgage Bonds and Preferred Stock still bear 6 per cent. interest I assume?

1197 A. Yes sir.

Q. And the consolidated bonds 4½%?

A. Yes sir.

Q. What are the Notes Payable, drawing?

A. At the present time and for the past five or six months, from 6% to 7½%.

Q. What is there to account for the increase in the rate of interest above 6% on this item?

A. The state of the money market during this period in which rates have been higher than they generally were during the preceding year.

Q. Is the money worth that in the present state of the money market?

A. It is and many borrowers are obliged to pay even in excess of the highest rate I named.

Q. What about the item "Elbert Wheeler, Treasurer, $19000.00"?

A. There has been no entry of interest charge on that account, and ordinarily would not be until the end of the fiscal year, but rates existing during the year are taken into account in making the charge.

Q. It is the money of other persons in your hands that you are loaning to this Company?

A. Yes sir, mostly.

Q. What was the indebtedness of the Knoxville Water Company March 30th, 1901, and what property did that indebtedness cover?

A. The several items thereof are as follows:

"*Indebtedness March* 30, 1901.

1st. Mortgage Bonds	$150000.00
Debenture Certificates	85000.00
Capital Stock, Preferred	295000.00
" " Common	645000.00
Notes Payable	251500.00
Accounts "	44.74
Elbert Wheeler, Treas.	43000.00
Depreciation Fund, Reinvested in Plant	19344.94
Making aggregate of	1488889.68

1198 This covers all of the property of the Knoxville Water Company wherever located.

Q. What was the indebtedness of the Company March 31, 1902?

A.—

Indebtedness March 31, 1902.

1st Mortgage Bonds	$150000.
1st Consolidated Mortgage Bonds	411000.
Capital Stock, Preferred	275900.
" " Common	645000.
Notes Payable	20000.
Elbert Wheeler, Treas	35000.
Depreciation Fund, Re-invested in Plant	36391.53
Making an aggregate of	1573291.53

Q. Under what instrument were the $150000 of first mortgage bonds stated by you to have been outstanding March 30th 1901 and March 31, 1902, issued?

A. Under Deed of Trust to the American Loan and Trust Company of New York.

Q. Of what date?

A. November 15, 1884, I think.

Q. They were issued under the first mortgage executed by your predecessors in the management of this company were they?

A. Yes sir. It was not actually the first mortgage given, but it was the first mortgage providing for issue of bonds to the amount of $150000.

Q. Were any of the $85000 of Debenture certificates outstanding March 30th 1901 issued after Wheeler and Parks bought an interest in the property?

A. No sir, they were all issued previously.

Q. What rate of interest did the debenture certificates bear?

A. Six per cent.

Q. What rate of interest does the preferred stock bear?

1199 A. Six per cent.

Q. What rate of interest was paid for the "Notes Payable" listed in the indebtedness for 1901?

A. That was variable, depending upon the conditions of the money market.

Q. Well about how did it range?

A. I am unable to state without considerable investigation of the books, but would say in the vicinity of 6%. It may have been a little more, I think not less.

Q. What rate of interest was paid in 1901 on the $43,000 loaned the company by Elbert Wheeler, Treasurer?

A. Six per cent. I think; not exceeding that amount certainly.

Q. State the nature if you please of the item "Depreciation Fund, Re-invested in the Plant" assigned by you for the year ending March 30, 1901?

A. It is the balance of what we call the "Depreciation Fund Account" into which account is carried each year the net gains or losses resulting from operation of the plant for such year, and the item stated is the accumulation of such net gains in excess of net

losses from the beginning of the operation of the plant, so far as we are able to determine it from the books of the company coming into our possession at the time of purchase, and subsequent operations.

Q. You say "net gain." By that do you mean that a dividend has been paid on common stock and still this much money remaining?

A. No dividend has ever been paid upon the common stock.

Q. Before you reached this result, was any charge made for current depreciation?

A. No sir, none whatever.

1200 Q. Now this fund is described by you as being "Re-invested in the Plant." What does that mean?

A. It means that such accumulation of net earnings were used as any other cash receipt by the company—was used in payment of construction charges to the extent that such funds were available.

Q. Was there any such cash balance as that March 30, 1901?

A. No sir, the cash balance on that date was less than $1,000.00.

Q. Was this "Depreciation Fund" of $19,000.00 the net earnings in the sense you have used that phrase of the year ending March 30, 1901, or of several years?

A. It was not the net earnings of the fiscal year ending March 30*st* 1901, but was the balance of the entire account from the beginning of operations by the company.

Q. To what did the Re-invested Depreciation Fund amount o*f* the 31st of March 1902?

A. $36,391.53.

Q. Was there any cash balance of that amount at that date?

A. No sir, the cash balance on that date was less than $1,000.00.

Q. Has this "Depreciation Fund" accrued with any regularity as to amounts per annum?

A. No sir, in some years there has been a deficit from operations by which it has been reduced.

Q. I have in my hand a paper which is a tabulation showing net gains or losses yearly since 1891, and showing the amount available for depreciation fund. Did you make that tabulation?

A. I caused it to be made sir.

Q. Is it correct?

A. It is.

1201 Q. Please state the same.

A. It is as follows:

Net Gains or Losses Yearly Since 1891, *Showing Amount Available for Depreciation Fund.*

Net Gains or Losses for Year.

	Loss.	Gain.	Deficit.	Depreciation fund.
Dec. 31, 1891.....	.....	.....	21,324.48	
M'ch 31, 1893.....	.....	8,246.48	13,078.00	
1894.....	.....	12,145.97	932.03	
1895.....	5,426.05	.....	6,358.08	
1896.....	.....	7,991.71	.....	1,633.63
1897.....	1,067.73	.....	.....	565.90
1898.....	.....	4,603.81	.....	5,169.71
1899.....	.....	479.26	.....	5,648.97
1900.....	.....	6,751.21	.....	12,400.18
1901.....	.....	6,944.76	.....	19,344.94
1902.....	.....	17,046.59	.....	36,391.53

Q. From what source generally, without naming the particular source, were the funds derived that were loaned by Elbert Wheeler, Treasurer to this company?

A. To a small extent from my personal funds; mainly from the use of other funds of which I have charge.

Q. Were the funds included in item "Notes Payable" secured in the Boston market, or how were they secured?

A. Mostly in Boston, but some outside.

Q. In 1902 the item of $150,000 "First Mortgage Bonds" is identical as I understand with the similar amount listed in 1901?

A. It is the same item.

Q. Do you recall the date of the creation of the consoli-
1202 dated mortgage?

A. The mortgage is dated *July 3rd, 1901.*

Q. What amount of bonds does it authorize the company to issue?

A. One million dollars.

Q. Is the $411,000.00 listed on your statement of Indebtedness March 31, 1902 the full amount of bonds issued under that mortgage?

A. It is. It is the full amount disposed of. We have $104,000 of them in the company's treasury.

Q. What rate of interest do those bonds bear?

A. Four and a half per cent.

Q. Were they sold at par?

A. No sir.

Q. Will you state at what rates they were sold—at what discounts they were sold?

A. They were mainly sold on the basis which should make them a five per cent. investment for twenty years.

Q. Would that amount to more than 95 cents on the face value of the bonds?

A. I think it is 93 cents and a fraction. As deliveries were made

at various dates, the amounts vary, but computations were substantially all upon that basis.

Q. When are the First Mortgage Bonds of $150,000 due?

A. July 1, 1912, I think.

Q. Does the First Consolidated Mortgage make provision for the redemption of the $150,000 of original First Mortgage Bonds?

A. It provides for leaving in the hands of the Trustee under the mortgage, the First $150,000 bonds authorized by it, the same not to be issued except in payment of all, or such part of the First Mortgage Bonds as may be presented at maturity or previously.

1203 Q. Has that provision of the mortgage been complied with by the Water Company?

A. Yes sir.

Q. And the bonds deposited?

A. The bonds have always remained with the Trust Company and have never been delivered to the Water Company.

Q. Was any effort made Mr. Wheeler to secure a sale of these consolidated mortgage bonds at a less discount than the 7% which you say was actually made at last?

A. Yes sir there were several efforts made to sell them on terms more favorable to the Water Company.

Q. Who took them finally, such of them as were taken?

A. The larger part of them were taken by H. M. Payson and Company of Portland, Maine.

Q. What, if you are able to state, of the purchaser exacting a discount of approximately 7% upon the face of the bonds?

A. He contended strongly for a time that anything bearing interest less than 5% was unusual, and that his customers or the market would not and had not been in the habit of buying securities bearing less than 5% interest, and that it would be impossible, in his judgment, to dispose of any considerable number of our bonds at par, or at any price which would gain him a reasonable consideration for his efforts in disposing of them.

Q. I notice that the amount of preferred stock has been reduced, or was reduced between March 30, 1901, and March 31, 1902 a little over $19,000.00. How was that reduction accomplished?

A. The preferred stock, when originally issued, was issued under a provision among others, that it might be redeemed at the option of the company at any time. The reduction in amount between the

1204 two dates named was accomplished under this option of the company by means of funds derived from the sale of the First Consolidated Mortgage Bonds, or in exchange therefor by sundry stockholders who were willing to make, the exchange on agreed terms.

Q. How was the reduction between the same two dates in the amount of "Notes Payable" accomplished?

A. By applying the proceeds of the sale of bonds to the cancellation or to the payment of outstanding notes of the company.

Q. That reduction seems to have been $231,500.00?

A. The entire amount of "Notes Payable" appearing on statement of March 30, 1901, was paid, and the $20,000.00 of "Notes Payable"

appearing on statement of March 31, 1902 were new notes which it was necessary to place for the payment of construction items between the time of payment of the notes appearing on statement of 1901 and the date of the following statement of March 31, 1902?

Q. How about the account of "Elbert Wheeler, Treasurer?"

A. I don't recall whether that account—the statement of 1901 was fully cancelled and the account of 1902 created anew or not. As a matter of fact that account is continually variable depending on monies available at my disposal and the needs of the company.

Q. Do you know whether Mr. Payson has sold all the consolidated mortgage bonds that he took from you?

A. He informed me within a week when he called at my office that he had about $125,000.00 of them still unsold.

Q. What was the date of the sale to him?

A. It was in the Summer of 1901, the exact date I cannot state here.

Q. What experience have you had in the sale of Water Works Bonds, General Wheeler?

1205 —. I have arranged the sale of bonds for several water companies of which I am Treasurer, which sales have been made at one time and another since the year 1885 when I first took up the Water Works business.

Q. Have you been trying to dispose of the bonds of the company in addition to those sold to Mr. Payson and listed here at $411,000.00?

A. I have sir.

Q. Have you been able to sell them?

A. No sir.

Q. What is the reason why you have been unable to marke them?

A. The rate is considered too low by most investors and the risks of the business are considered material. Water Works securities as such are in somewhat bad odor due to questionable methods of issue which have obtained with various promoters of Water Works property in the last twenty years, and also due to well understood antagonistic attitude of municipalities, to quasi-public corporations.

Q. In your efforts to sell these bonds have you been met with any objections arising out of the particular circumstances of this company?

A. We have sir.

Q. I will ask you to state what they were?

A. Previous to the sale made to H. M. Payson and Company, we arranged a sale, as we supposed, with a Boston house, such sale being agreed upon subject to the right of examination of the plant. Such examination was made by an authorized representative of the house named who confirmed all the particulars, financial and physical, set forth by us, but who advised the proposed purchasers concerning the previous and existing attitude of the city toward our company, and raised in the minds of the proposed purchasers such uncer-

1206 tainty as to what the value of the plant would be at the expiration of the existing contract with the city as to lead them,

with other possible objections raised by their expert examiner to finally decline to carry out the purchase as arranged, although they were advised by us in detail of this attitude of the city before the terms of sale were agreed upon.

Q. What amount of bond was computed in that negotiation?

A. $515,000.00 were to be immediately taken.

Q. Would that have been sufficient to fund your outstanding interest bearing obligations?

A. All except the $150,000.00 First Mortgage Bonds which we had no option to call, and $200,000.00 preferred stock which we agreed to leave outstanding. I might add if you wish that we made efforts with one or two other Bond Houses to see if sale could be accomplished, but without satisfactory results, because none of them would consider the purchase of a bond bearing interest at less than 5%, and such purchasers insisted that they must buy 5% bonds at a discount.

Q. I will ask you to name the expert who operated for the Boston House with whom you had made a conditional sale for $515,000.00 bonds?

A. Mr. Charles L. Goodhue of Springfield, Massachusetts.

Q. What is Mr. Goodhue's occupation?

A. His occupation has been mainly, I think the construction and operation of Water Works Plants.

Q. Does Mr. Goodhue hold any official position now?

A. I think he still has charge of the management of sundry Water Supply Companies.

Q. Has he any connection with the Water Board of Springfield, Massachusetts?

A. I think so, but I am not positive.

Q. I believe I will ask you to name the Boston House with
1207 whom you were negotiating for this $515,000.00?

A. George A. Fernald and Company.

Q. Was it a Banking House?

A. Yes sir.

Q. Is it a dealer in securities to any extent?

A. Yes sir they are prominent dealers in such securities in Boston.

Q. Are you prepared General Wheeler to state for the present and for preceding years what the construction account of the Knoxville Water Company is?

A. According to the books of the Company you mean?

Q. Yes sir.

A. Yes sir.

Q. What is the present amount of Construction account as shown by the books of the company?

A. March 31, 1902, which is the close of our last fiscal year the amount was $1,548,377.17.

Q. From what source did you derive the amount, $471,496.75 total construction account to December 31, 1891?

A. It was determined, as best I could, from an examination of the

old books of the company, which were turned over to us at the time of purchase by Wheeler & Parks.

Q. At what date did you as Treasurer, if you remember, and if you do not remember the exact date, state the approximate date, get possession of the old books of the company?

A. Directly after the change of control, but the exact date I cannot state. It was about December 31, 1891 I think; I am not informed exactly.

Q. About the date you assign to this first item here?

A. About that date, yes sir.

Q. I will ask you to give to the stenographer a statement beginning December 31, 1891 and extending to March 31, 1902, showing in one column total construction account at the end of each
1208 year and in another column the yearly additions thereto?

A. I will, sir. It is as follows:

Total Construction Account per Treasurer's Books, from December 31st, 1891, to March 31st, 1902.

Year.	Yearly additions.	Total construction account end of year.
To Dec. 31st, 1891	.....	$471,496.75
March 31, 1893	16,747.34	488.244.09
" 1894	347,784.17	836,028.26
1895	312,879.30	1,148,907.56
1896	52,768.89	1,201,676.45
1897	28,004.21	1,229,630.06
1898	5,038.34	1,234,719.00
1899	8,448.07	1,243,167.07
1900	165,840.83	1,409,007.90
1901	60,087,96	1,469,095.86
1902	79,281.31	1,548,377.17

Q. Were the old books of the Company, that is the books prior to your election to the office as Treasurer, kept in satisfactory form and according to proper methods for the keeping of books of a Water Company?

A. They were not satisfactory to us, nor indeed so intelligible that we could really discover from them information that was necessary.

Q. What were some of the particular defects in the method?

A. They seemed to be characterized by lack of system, and we had doubts whether or not profit and loss items, as we understand such items, were charged thereto, or to construction account. Indeed it was practically impossible to determine the real condition of the Company from its books by such examination as we made.

Q. State how you got this item of $471,496.76 of construction account to December 31st. 1891?

1209 A. By bringing together the Ledger balances of accounts which from such examination as we were able to make we thought belonged to construction account, viz: Betterments, Capital

Stock Issue, Bond Issue, and sundry accounts of Extensions, new Services and the like, which we class as Construction items.

Q. Was this item, at its present amount, carried into the new books of the company?

A. Yes sir at its amount as thus determined.

Q. General Wheeler, according to those first books of the company, to what was the proceeds of sale of Stocks and Bonds of the company applied, to Construction account, or otherwise?

A. Mainly to Construction account, but the old books of the company as they came to us appeared to show an accrued deficit in operation.

Q. Of how much?

A. Amounting, December 31, 1891, to $21,324.48.

Q. In opening your new books, did you include in your construction account any part of the proceeds of sales of Stocks and Bonds except those shown in the books of the old company to have belonged to Construction account?

A. We only entered in our new books the securities we found already issued.

Q. Well did you treat the proceeds of the sale of those securities according to the division thereof, or the application thereof, that was made in the preceding books—did you carry anything to Construction account that the old books didn't place to Construction account?

A. I am not certain whether the old books carried for instance the face value of the stock and bonds into Construction account or not.

1210 Q. Between December 31, 1891 and March 31, 1893, there seems to have been an addition to Construction account of $16,747.34. Of what did that consist, without giving the particular items?

A. Expenditures made for additions to the physical plant.

Q. Were those expenditures made directly from the Treasury of the company?

A. Yes sir.

Q. Do your books contain an itemized statement of those expenditures?

A. They do.

Q. On March 31, 1894, the Construction account had increased from $488,244.09 to $836,028.26. Of what did that increase consist as it appears from the books of your company?

A. Like expenditures made for additions to the physical plant.

Q. Were these expenditures made in money directly from the Treasury of the company, or by the issuance of stocks and securities?

A. Partly by each.

Q. Of what did the bulk of the items consist?

A. The main increase was paid for undoubtedly by issue of additional securities in accordance with contracts made by the company.

Q. Were those the securities issued to Wheeler & Parks?

A. Yes sir.

Q. Now in so far as that item is represented by securities issued to

Wheeler & Parks, is there any itemized statement on the books of the company further than the amount of the stocks themselves?

A. Not of the actual cash cost of the items of work performed by them. Of that we have no knowledge and never had.

1211 Q. But how is it where the payments were made directly from the Treasury of the Company?

A. All such are shown in detail by the books of the Company.

Q. There appears to have been a very large increase of Construction Account between March 31, 1894 and March 31, 1895. Of what did that increase mainly consist?

A. Further additions to the physical plant under the same contract with Wheeler & Parks.

Q. And does the same statement as to items of account apply to this as to the preceding item?

A. Yes sir.

Q. Without taking up the account, and the yearly additions thereto subsequent to 1895 in detail, I will ask you if your books show where stocks were issued in payment for construction—the amount of the stock, and where money was paid directly from the Treasury, contain an itemized statement of such payments?

A. They do.

Q. Have you examined the first Stock Book of the Company?

A. I have sir.

Q. According to that book, a good many shares were issued—recalled and re-issued in various amounts. I hold in my hand a statement headed "Supposed Original Issues of Stock. Under Construction Contracts &c" extending from 1882 to February 1886. Did you make out this paper?

A. I did.

Q. I will ask you to furnish its contents to the stenographer?

1212 A. It is as follows:—

Supposed Original Issues of Stock Under Construction Contracts, &c.

Date.	Nos.	Name.	Shares.	
1882	1–22	F. M. Loweree.....	1383	
Nov. 22, "	41–43	" "	617	
				2000
Sept. 24 1885	147–162	Geo. P. Sheldon.....	130	
" " "	163	Grace W. Hinsdale.....	10	
" " "	166	R. N. Hood.....	10	
" " "	167	C. M. McGhee.....	100	
" " "	168	H. F. Crosby	10	
" " "	169	C. W. West.....	10	
Oct. 5 "	172	F. McNulty	10	
Dec. 11 "	175	E. J. Sanford.....	100	
Jan. 2 1886	176–8	Geo. P. Sheldon.....	70	
Feb. 2 "	180	Wm. Ogden.....	40	
" " "	181	A. C. Ogden.....	10	500
				2500

Q. Did you make up that statement by a personal inspection of the said Stock Book?

A. I had the statement first made up by my Secretary, and then examined and verified it personally, as best I could from the stubs and certificates and remarks thereon in the original Stock Book of the Company.

Q. General Wheeler, what is your salary as Treasurer of this Company?

A. One and a half per cent. (1½%) of the gross water collections before the same have been reduced by discounts and rebates, and out of this salary I am required to pay the salaries, or parts of them, of my secretary and also of my bookkeeper.

1213 Q. What is your fiscal year?

A. Since March 1, 1893, it has been March 31, of each year—from March 31st of one year to the same date in the following year.

Q. Your salary is based, is it, upon water bills sent out for that year before any rebates or reductions are allowed or exactly what is it based upon?

A. It is based upon actual collections for water as entered upon our books before the amount thereof is reduced by abatements and rebates, which items we enter on the other side of the cash book as payments. This method of entry is used to enable us readily to discover each year the amount of cash discounts and other allowances made by us which our rate schedule does not contemplate, but which are allowed to assist in securing prompt payment of bills. The actual collections of course, are determined from our books by subtracting the sum of such abatements and discounts from the entries for water as made upon the other side of the cash book.

Q. To illustrate the method, state how it would have worked out for your fiscal year 1901-1902?

A. The total entries of cash credited to "Water" that fiscal year were $100,349.38. Entries of this total sum will be found upon our cash book for that fiscal year upon the debit side thereof. On the opposite or credit side of the same cash book will be found entries of sundry abatements which includes cash discounts for prompt payments to the amount of $4502.01, and in addition thereto rebates allowed and paid to the amount of $395.25, which subtracted from the entries of collections in "Water" account, leaves a balance of net cash actually collected in the fiscal year of $95.452.12. Now

1214 the Salary percentages are reckoned upon said total in the "Water" account, that is upon the item of $100,349.38 instead of upon the net amount collected, which as above stated was $95,452.12.

The further taking of the deposition was adjourned until 2 O'clock P. M.

2.00 O'CLOCK P. M.

The further direct examination of General ELBERT WHEELER was resumed.

Examination by Mr. CALDWELL:

Q. General Wheeler, I hand you a table headed "Interest Bearing Liabilities of Various Classes, outstanding at Dates Given" extending from *extending from* December 31, 1883, to September 30, 1902, and ask you to file the same *aa* Exhibit #1 to your deposition?

A. I herewith file the same as Exhibit #1 to my deposition as requested.

Q. Does such a thing as reduction of income by reason of loss of services ever occur to the Company?

A. Yes sir, occasionally.

Q. Have there been any recently?

A. The Knoxville Iron Company has made plans which will terminate its service with us, and has removed to a point outside of distribution system. There are sundry other services just now being cut off and discontinued by reason of the construction of the new Railroad called the Knoxville, La Follette & Jellico Railroad.

Q. How about the Hotel Vendome?

A. The Hotel Vendome has recently terminated its hydraulic elevator service and substituted electricity, and there have
1215 been many cases of that same kind or character substituting electricity for water.

Q. How much was the Vendome paying you?

A. I think $800.00 or $900.00 a year.

Q. Do you remember how much the Iron Company was paying you?

A. I do not accurately.

Q. When was the Iron Company's service discontinued?

A. I am not exactly informed as to the date of its termination.

Q. When was the Vendome's service discontinued?

A. Within the past week.

Mr. PICKLE: We object to inquiries relating to dates subsequent to those which he brings his accounts up to.

Cross-examination by G. W. PICKLE:

Q. General Wheeler, in the statement that you have given of the issuance of the original stock, you have not given the date or dates at which certificates "1" to "22" issued to F. M. Loweree were issued. Will you please give that date?

A. I cannot, because neither the certificates themselves nor the stubs give the month, or the day of the month; only the calendar year, and we have no other record.

Q. They preceded, or purport to have preceded date of November 22, when "617" shares were issued to Loweree?

A. Presumably, as the certificates in numerical series were in advance of numerical series of certificates issued November 22.

1216 Q. Will you state how many shares were issued to S. E. Cooke, or to his wife, S. G. Cooke, and the date of issuance as shown by the book in your possession?

A. Certificate #45 for 25 shares was issued to S. E. Cooke, November 22, 1882, and on the same date Certificates #46 and #47 were issued to S. G. and S. E. Cooke for 175 shares and 25 shares respectively. On February 25, 1884 certificate #85 was issued to Mrs. S. G. Cooke for 165 shares. I find no other issues to either of them.

Q. Have you a copy of the two original mortgages upon this property, the first for $125,000.00 and the second for $150,000.00 issued in 1882 and 1884 respectively?

A. I have them in my office at Boston; I suppose they are on record here also.

Q. Can you give the respective dates of those mortgages?

A. The first mortgage for $125,000.00 is dated July 1st, 1882, and the second mortgage for $150,000.00 is dated November 15th, 1884.

Q. These mortgages cover the property, franchises, exemptions, &c. of the Knoxville Water Company, do they not?

A. By reference to records, I find that the first trust deed conveyed the following: "All the right, title, interest, estate and property of the party of the first part, in and to all and singular the Water Works, now being constructed, and to be constructed, operated and maintained by the party of the first part at the City of Knoxville, in the State of Tennessee, and all the lands and ways, and rights-of-way, buildings, structures, houses, reservoirs, machinery,
1217 tools, engines, hydrants, implements, main and distributing pipes, and all other things whatsover now belonging, or appertaining to, or which hereafter shall belong or appertain to, or which may be used for the purpose of constructing, operating or maintaining said Water Works, and all the profits, income and revenues thereof, or to arise therefrom, including all rental of hydrants, and income from water rates, and all profits, income, revenues and emoluments derived from the said City of Knoxville, Tennessee, and all the other property, both real and personal and mixed, and all the powers, grants, rights, privileges, benefits, advantages, immunities, exemptions, charters, franchises and contracts now belonging or appertaining to or connected therewith, or hereafter to belong, or appertain to, or be connected with said Water Works, and all the property which now belongs to the party of the first part, or may hereafter be acquired by it as connected with, or appertaining to the said Water Works as now being constructed, or to be hereafter constructed, equipped and operated at the City aforesaid. To have and to hold all and singular the said Water Works with the appurtenances and other premises, property and things, powers, grants, rights, privileges, benefits, advantages, charters, franchises, contracts, immunities and exemptions thereto appertaining, unto the parties of the second part, and to their successor, or successors as continuing Trustees forever, &c. &c." The provisions of the second mortgage are substantially identical to those appertaining to the first.

Q. Who signed those mortgages respectively?

A. The first mortgage was signed by S. E. Cooke, President, and F. M. Loweree, Secretary, George P. Sheldon, and William H. Bingham, Trustees. The second mortgage was signed by Sam Mc-

Kinney, President, attested by John M. Brooks, Secretary and
1218 signed by the American Loan & Trust Company of (N. Y.) by R. N. Hazard, President, and attested by W. D. Snow, Sec'y.

Q. General Wheeler in your statement of the indebtedness of the Knoxville Water Company, at date March 30th, 1901, you include, do you not preferred and common stock $940,000.00?

A. Yes sir.

Q. And in your statement of indebtedness March 31, 1902 you include $920,900 of preferred and common stock?

A. Yes sir.

Q. And a like sum in the statement of indebtedness of September 30, 1902?

A. Yes sir.

Q. You likewise include in each of those statements an item for Depreciation Fund, re-invested in the Plant, being $19,344.94 in the statement of March 30, 1901, and $36,391.53 in the other two statements referred to, do you not?

A. Yes sir.

Q. Now I understand you this item is made up of net earnings of the plant, that you claim was re-invested in the plant, am I right?

A. Accrued net earnings to those dates respectively re-invested in the plant, yes sir.

Q. For what years had the first item referred to of $19,344.94 accrued?

A. All the years from 1883 to March 31, 1901.

Q. I see you put in a table of Net gains or losses of the plant since 1891. Have you a like table of the net gains and losses prior to that time?

A. No sir, because the old books of the company are not possible of interpretation by me to show to what extent "Gains or Losses" were made in each year, but in closing up the old books of the com-
pany, it appeared that there was an accumulated deficit re-
1219 sulting from the operations of the plant to December 31, 1891 to the extent of $21,324.48.

Q. From operations from the institution of the plant up to that date?

A. Yes sir.

Q. Well how do you get, notwithstanding that fact, this sum of $19,344.94 as accrued net earnings that are reinvested in the plant?

A. If you will refer to *"net gains or losses yearly since 1891"* you will note that in the fifteen months ending March 31. 1893, there was a gain of $8246.48, and the deficit at the time of December 31, 1891 was correspondingly reduced to $13,078.00.

In the next fiscal year ending March 31, 1894, the gain was $12,-145.97, reducing the deficit at the beginning of that fiscal year to $932.03 at the close of that fiscal year.

In the following year ending March 31, 1895, there was a net loss in operating the plant of $5426.05, which added to the deficit existing at the beginning of the year made a deficit at the close of the year of $6358.08.

The next fiscal year ending March 31, 1896 shows a gain of $7991.71, and at that time, for the first time, this Depreciation Fund, so called, had something standing to its credit viz: $1633.63.

In the next fiscal year ending March 31, 1897, there was a loss from operation amounting to $1067.73, which subtracted from the amount of Depreciation Fund at the beginning of the year, left remaining in that fund the sum of $565.90.

The net gains in each of the years following were various as set forth in the table, and added together from year to year made up the amount of $19,344.94 on March 31, 1901.

1220 Q. So there was a deficit, as you stated, when you took charge of the plant in 1890 or 1891?

A. Yes sir.

Q. And you have stated the amount of it?

A. Yes sir.

Q. Now General Wheeler, what amount of interest was the company paying on the bonded indebtedness from date of original construction, or about that date—1882—up to the time when you went in in 1891?

A. I suppose it was paying six per cent. on its bonds and debenture certificates from the time they were issued.

Q. And they amounted to $295,000.00?

A. Ultimately, yes sir.

Q. What was the cause of the losses in the years 1896 and 1897 that you estimate?

A. The cause of deficit in 1895 was mainly due to payment for the first time of interest on the preferred stock to the amount of $11,883.33, besides which for the first time $3068.75 was paid for the expense of operating the high service and filter plant, which, with outlays for enlarged mains and additional construction at the River Station, contributed materially to an improved public service, but with little immediate increase in the number of customers or income therefrom. In 1897 the apparent loss as compared with the gain of 1896 was mainly due to an item of $5537.42 credited to surplus account as a cross-entry for the same item wrongly charged to it in closing the old books in 1891. Besides this, there was a loss of about $1000.00 in meter income, due to the displacement of hydraulic elevators by electric while the operating expenses

1221 increased $1439.80 as compared with the preceding year.

The further taking of this deposition was adjourned until Saturday morning December 13th. 1902 at 9:30 o'clock.

SATURDAY MORNING, *December 13th*, 1902—9:30 o'clock a. m.

The further cross-examination of General ELBERT WHEELER resumed.

Q. General Wheeler, in the statement of Net Gains and Losses, you have omitted to state what the net gain or loss was for the last six months, to wit: from March 31, to September 30, 1902. Will you add that?

A. I am unable to state this in exact terms, because the books

were not closed September 30th, 1902, as it was not contemplated that such statement would be required, and in the ordinary course of business they were only closed, and such Net Gain or Loss determined, at the end of the complete fiscal year. An approximation of the amount, but only an approximation may be determined from the statement of Earnings and Expenses from April 1st, 1902 to September 30th, 1902 heretofore made.

Q. Well determining it approximately from the data to which you have referred, what would it be for the six months?

A. Probably about $11,000.00 for the six months.

Q. Gain, you mean?

A. Yes sir, but this figure should not be used as conclusive, as it does not include any allowance for interest on Cash loans,
1222 nor some other interest items which are settled only annually. Upon further reflection, I think that between $9000.00 and $10,000.00 would be a nearer approximation.

Q. Under the same head of "Net Gains" and "Losses" I see an item of December 31, 1891, deficit $21,324.48 which you have explained was a deficit shown by the books of the company prior to the time that Wheeler & Parks purchased a controlling interest in this plant. Now will you please give a statement of the analysis of those books by which you arrived at this result. I prefer a tabulated statement with reference to the pages of books relied on?

A. I will endeavor to do so, that is, determine what led me to conclude or assume that that was the deficit at that time. From an examination of the Journal, under date of December 31, 1901, covering transactions from October 1st 1883 to December 31, 1891, I concluded that the gross accumulated income from "Water" including sundry accounts unpaid, but which were deemed good, amounted December 31, 1891 to $208,735.67.

By like examination and conclusion, I made summary of the operating expenses from the beginning of operation of the plant to December 31, 1891 to be $106,170.23; Interest charges for the same period $115,349.50; Legal expenses $3000.00; Personal Injury $3.00, and Depreciation Fund was charged, and the Depreciation item elsewhere referred to in my cross-examination amounting to $5537.42, concerning which I have stated that it was erroneously charged to Surplus account, was included in the computation by which said deficit of $21,324.48 was reached. The sum total of these charges for operating expenses, interest &c. in Profit and Loss Ac-
1223 count amount to $230,060.15, which amount exceeds the item above given for water collections viz: $208,735.67 by $21,324.48, which is the deficit item concerning which you inquire.

Q. Give a description of the Book and the pages from which you take these items for the purpose of identity?

A. It is the Journal of the Company, covering transactions from October 1st 1883 to December 31st, 1891. It is found on page "90."

Q. Well this statement purports to be as of date December 31, 1899, does it not?

A. No sir, 1891. That is simply the Ledger page you refer to.

Q. Will you turn to the page of the Ledger referred to and give

the items of the respective dates that constitute the "Interest" account, aggregating $115,349.50, and file the same as Exhibit #2 to your deposition?

A. I herewith file the same as Exhibit #2 to my deposition as requested.

Q. Now General Wheeler, will you turn to the Ledger which shows the items of operating expenses $106,170.23.

(Witness complies with request.)

Q. I see your statement of Gains and Losses runs to December 31, 1891 one year after you began operations. What was the state of the accounts on December 31, 1890 at the time that Wheeler & Parks made the purchase of the plant?

A. I do not know sir; I have never made calculations as of that date.

Q. The items of the Expense account from and after January 1891, as they appear on the Ledger to which you have referred, simply state the date and amount without stating what the

1224 expenses was incurred for, do they not?

A. Yes sir, generally.

Q. Prior to that time the items are specified, stating what the expense was incurerd for, do they not?

A. To some extent.

Q. Have you the book of the old company showing the Construction account in 1882, 1884?

A. The book shows under the headings of Betterment account, Force Main, Tapping, Construction, Reservoir, Street, Pump Station and Meter account sundry items which were merged into Construction account December 31, 1891.

Q. What book do you refer to?

A. The old Ledger of the Company, showing such items from October 1883 to December 1891.

Q. Now turn to the pages and designate them on which the original construction account can be found?

A. "Force Main" on pages 54, 55 of Book marked "Ledger" covering items from October 31, 1882 to June 30, 1884; "Tapping" account page "5" of main Ledger; "Construction" account page "6" of same Ledger; "Reservoir" account pages "42, 43, 44" of same Ledger; "Street" account, pages "40, 41" and "63 to 67" inclusive of same Ledger; "Pump Station" account pages "35" to "39" inclusive, also pages "77" and "78" of same Ledger; "Meter" account page "117" of same Ledger.

Q. General Wheeler, does not this Ledger account bear evidences of having been made up at one sitting in some of its pages; take for instance page "230" embracing years 1890, 1891, isn't it apparent that it was made up at one sitting?

A. Only in the items of transferring from the sundry Construction accounts, which I have stated were merged into Construction account.

1225 Q. Don't the subsequent items on that date appear to have been made at one time?

A. I don't think so.

Q. They are all in the same handwriting and uniform are they not?

A. Yes sir, apparently the bookkeeper at that time was a careful and methodical writer.

Q. Who was the bookkeeper at that time?

A. I think that is Mr. Hague's writing.

Q. General Wheeler, will you produce and file as exhibit #3 to your deposition a certificate of preferred stock issued by your company?

A. Yes, sir, I herewith file the same as exhibit #3 to my deposition as requested.

Q. The original issue of stock of this company was $200,000 as I understand; what was the amount of its capital at the time Wheeler & Parks purchased December 31, 1890?

A. $250,000.00.

Q. When and by what authority was the additional $50,000 issued?

A. An examination of the Stock Certificate Book appears to indicate that 500 additional shares were issued between the dates of September 24, 1885 and February 2, 1886. I have never been able to find any record book of the company to indicate by what authority it was issued, nor indeed as to any other proceedings of the company.

Q. What became of this $250,000.00 of stock?

A. It is still outstanding.

Q. Is it common or preferred stock?

A. It is common stock.

Q. Have new certificates been issued?

A. To some extent.

1226 Q. It is a part of the $640,000.00 of common stock that is outstanding?

A. $645,000.00 you mean?

Q. Yes sir.

A. Yes sir.

Q. General Wheeler, can you give a statement of the gross earnings per annum of this company from say 1884 or 1885 up to the present time. I prefer a tabulated statement?

A. I cannot sir give such statement previous to the time I took charge of the books.

Q. From what date can you give such statement?

A. January 1st 1892.

Q. Well please give such statement to the stenographer?

A. It is as follows:—

Water Collections, Operating Expenses, and Interest Paid from January 1, 1892, to Sept. 30, 1902.

Year.	Water collections.	Operating expense.	Interest.
Jan. 1, 1892–M'ch 31, 1893...	64,761.49	31,785.18	21,739.66
1893–4 ...	49,949.52	19,596.09	15,182.98
1894–5 ...	50,845.29	28,019.69	28,144.22
1895–6 ...	59,517.89	26,414.63	33,946.30
1896–7 ...	58,436.86	27,116.56	35,427.08
1897–8 ...	59,374.97	24,760.73	32,391.41
1898–9 ...	62,853.22	24,413.92	36,275.86
1899–1900 ...	78,538.23	31,545.25	45,453.61
1900–1 ...	88,481.39	35,775.89	48,351.89
1901–2 ...	95,452.12	37,003.25	47,509.74
Apr. 1, 1902–Sept. 30, 1902...	50,155.50	20,361.74	22,687.00

plu-

1227 Q. In regard to the $50,000.00 additional stock that was issued; is there any evidence of authority for its issuance in any of the books of the company in your possession?

A. I find none. As I have stated, I find no reference to it except in the Stock Certificate Book.

Q. You find no reference to it on the ledger or journals of the company?

A. No sir, and if the Company ever kept a record book, it was never turned over to us, at least in relation to this matter. The Stock Certificate Book I might add shows about the time of this issue an amendment of the certificates, by stamping upon them the amount of captial stock "$250,000.00" where previously and as originally printed it was $200,000.00 in amount, which is presumptive evidence perhaps that it was done by authority.

Q. The old certificates were used with this stamp upon them?

A. Yes sir, some of them.

Q. General Wheeler, you stated on yesterday that the putting in of meters has resulted in a loss of revenue to your company, and that you would be able to furnish a statement showing that fact. I wish you would put in such a statement——

A. With pleasure sir.

Q. —and explain how the loss comes about?

A. We commenced in July 1901 to set meters upon all domestic supplies where water was used for sprinkling service or for boarding houses, and also upon all store uses not heretofore metered. Between that time and April 1, 1902 about 950 of the ⅝ inch, or

1228 domestic size meters were set. Income during the quarter from July 1st to October 1st, 1901 was collected upon the basis of fixture or flat rates for these services, while in the quarter, July 1st to October 1st 1902 income was collected upon the basis of meter rates for these same services. Comparing the total income received for water in these two quarters, we find that for the quarter ending September 30th, 1902 the income was $366.58 more than it

was for the same quarter in 1901. Between these two quarters however, new services had been added (between Nos. 5131 and 5427) and the income derived from these new services in the last quarter under consideration amounted to net $722.05, all of which must be attributable to new business. Deducting therefore this amount of $722.05 from the income for the last quarter in question, leaves $355.47 as the net decrease in income from water figured upon the same services, which decreaes other things being equal, represents the approximate loss of income sustained during that quarter by placing these 950 services on meter basis instead of metered rates which loss is equivalent to a decrease of $1,466.32 per annum.

1229 Q. Well General Wheeler, has your Company any books showing the construction account, to wit, the items for purchases of material and for labor done for the years since 1891?

A. Yes, sir.

Q. Where are those books?

A. They are here.

Q. Will you let me see them?

A. (Hands attorney books) Yes, sir.

Q. Have you any statement of the cost of material and labor as to improvements made in North Knoxville, or old Knoxville under their contract of Nov. 1893?

A. I have not, except as shown by the amount of stock which we paid them in settlement of contract.

Q. Then all these books will show with reference to the cost of construction of the North Knoxville plant and of the construction of material portions, such as filter plant, high pressure service in the City here, is that you issued certain stock, preferred and common to Wheeler & Parks in payment for that work under that contract of 1893?

A. To the extent that work was done under that contract for which they were to be paid in preferred and common stock, my books show no details. For all other additions to construction account other than that specially contracted for, and thus paid for, my books show in full detail.

Q. Now take your construction account as heretofore stated in your deposition for the years 1894, 1895 for $347,784.17 for 1894, and $312,879.30 for 1895 were these items for construction by Wheeler and Parks under their contract of 1893?

1230 A. Largely, but not altogether.

Q. Well how largely—about how much of it?

A. In the fiscal year, ending March 31, 1894, $22,784.17 was paid for in cash and $325,000.00 in stock of the company, the latter item to Wheeler & Parks, & Wm. Wheeler. In the fiscal year ending March 31, 1895, $8379.30 was paid for in cash and $304,500.00 in stock.

Q. How was it for the year 1896, for which there is a charge in your Construction account of $52,768.89; what part, if any of that was done by Wheeler & Parks under that contract?

A. $6768.89 was paid for in cash during the fiscal year ending March 31, 1896, and $46,000.00 in stock of the Company.

Q. How with reference to the item of $28,004.21 for the year 1897?

A. $18,504.21 was paid in cash and $9500.00 in stock of the company.

Q. How was it as to the item of $5038.34 for the year 1898?

A. It was all paid in cash, as were all subsequent yearly additions to Construction account.

Q. Now you have carried the amount of preferred stock and common stock paid to Wheeler & Parks under their contract of 1893 for construction work into your construction account at the face value of that stock, have you not?

A. Yes sir.

Q. In what proportion of preferred stock and common stock has it entered into this account?

A. 2950 shares of preferred stock were paid them and 3900 of common stock.

1231 Q. They got more than a share of common stock for a share of preferred stock then?

A. They got the amount of each that I have stated sir.

Q. Was that in accordance with the contract?

A. Yes sir, in accordance with the contract and some slight additional allowances, if I remember correctly, by the Board of Directors, for additional work.

Q. What amount, if you can state specifically of the original capital stock of the company has been replaced or reissued?

A. You mean by the new form of certificate sir?

Q. Yes sir.

A. Nearly all of it; I cannot state exactly without referring to the Certificate books—almost all of it.

Q. Now as to the work done by Wheeler & Parks, you have no other data on the books of the company than the statement that so much stock was paid for it.

A. We have not, and I have never known as to the details of that.

The further taking of this deposition was adjourned until Tuesday morning December 16th, 1902, 9:30 a. m.

1232 TUESDAY MORNING, *December 16th*, 1902.

The further cross-examination of General ELBERT WHEELER was resumed.

Q. General Wheeler, on page "42" of your deposition you have given a table showing "water collections, operating expenses" of the Knoxville plant from January 1st, 1892, to September 30th, 1902, by years, excepting the first item which seems to include fifteen months. Who made up this table for you?

A. I did.

Q. Did you consult the books of original entry and make the additions yourself?

A. I consulted the Treasurer's books.

Q. Are those books the books of original entry?

A. They are the original entries in the Treasurer's books.

Q. But they are not the books upon which collections were originally entered, are they?

A. They are not the books upon which items of collections from the respective services are entered in the local office here, but they are the books in which the weekly detailed reports of collections transmitted from the Knoxville office to my office are entered.

Q. The books of original entry are in the office here are they?

A. Yes, sir.

Q. By whom are they kept?

A. By Mr. Roberts under the direction of the Superintendent.

Q. And your report is based upon reports made from those books, or purporting to be made from those books by the Superintendent and sent to you at Boston are they?

A. Yes, sir.

Q. General Wheeler, will you please state what per cent.
1233 per annum, and I mean for each year, of the water collections was consumed in operating expenses according to this statement that you have made on page "42" of your deposition?

Mr. CALDWELL: I don't think we ought to be asked to do those things. We have shown the collections and expenses and tabulated them at a great deal of trouble and have them in full.

COMMISSIONER: I don't think that is information, General Pickle. It is just a matter of time and labor, and I don't believe for mere clerical work that it should be done. The information is here really. It is just simply a question of calculation. I will sustain the exception if it comes in that light.

Q. I will ask you then if it does not approximate 50% for some of the years?

A. I haven't undertaken to figure it.

COMMISSIONER: It shows for itself and I think the question ought to be answered one way or the other.

A. In some cases it is more than 50%, and in some cases it is less than 50%.

Q. On page "5" of your deposition you have given a table of expenses, or items of expenses for the year beginning April 1, 1900, and ending March 31, 1901, showing the expense of the entire plant and the amount that you assigned to the city proper, but you have not carried out the item that you assign as expense of operating the plant outside of the city. Will you give the items under each heading of both the amount and per cent. of the operating expenses outside of the city?

A. The amounts outside of the city proper may be determined by subtracting those within the city proper from correspond-
1234 ing amounts for the entire plant.

Mr. CALDWELL: I wish to except to the remainder of the question. I am perfectly willing for the witness to state how the amounts may be found but I except to the remainder of the question.

COMMISSIONER: I sustain the exception. No information is called

for. It is simply figuring that any child can do and it takes up the time of this witness and everybody concerned.

Q. What per cent. of the Knoxville Water plant—I mean of its properties—lie outside of the city, Mr. Wheeler, according to the estimates of your company?

A. 12.29% of it as I understand it—that is of such property as is not used for the operation of the plant within the city limits.

Q. Isn't the per cent. of the plant that lies outside of the city larger than that?

A. I can only repeat the answer I have already given.

Q. You have already stated the per cent. that lies outside the city that is not used for supplying water in the city. Now I want to know what per cent., according to the estimates of your company, actually lie outside of the city, whether used to supply water in the city or not?

A. There is a small amount of property outside the city limits that is not used in the operation of the plant either in or outside the city limits, but I cannot state it in percentage.

Q. To refresh your memory, isn't there nearly 18% of your plant lying outside the city?

A. I am not able to state.

Q. And is it not a fact that that part which is used for supplying water in the city, being situated outside the city is likewise
1235 used for supplying water outside the city?

A. I have no figures of percentage other than those I have given you.

Q. Now in figuring, on page "5" of your deposition, the expense of the entire plant, and the proportion of that expense assignable to the plant within the city, have you not figured as the expense of the plant outside, as follows:

Alum	$159.10
Expense	60.02
Fuel	734.36
Insurance	17.26
Filter Station	22.70
Pump Station	39.48
Repairs	213.71
Salaries	780.51
Taxes	20.24

Making aggregate of $2047.48 as the proportional amount of the expense for the year 1900-1901 assigned by you in your estimate to the property lying outside the city?

A. I have not figured the various items mentioned in your question, but subtracting the total chargeable to the City proper from the total of the entire plant, the remainder appears to be $1940.93 instead of the figure you name.

Q. Well, assuming that you are right and that $1940.93 is the total of the expense that you assign to that part of the plant lying

outside of the city, and that $35,775.89 is the total expense of the plant for that year, I will ask you to state what per cent. of the expense of the entire plant have you assigned to the portion of the plant lying outside the city?

1236 A. I have not figured it.

Q. Will you figure it and see, inasmuch as you have stated what per cent. of the plant lies outside the city, as you understand?

A. About 5.43%.

Q. In your estimates, how do you get at the relative amounts of revenue derived from that part of the plant outside of the city and that part of the plant inside the city?

A. By adding up the actual income received from services during that fiscal year outside the city limits, and subtracting it from the total received we determined the actual receipts within the city limits.

Q. Do you keep a separate account, or has your company kept a separate account of the revenues received outside the city and inside the city?

A. We keep separate accounts with each customer wherever located.

Q. My question is, have you separated in your accounts, the revenues received from services outside the city and inside the city, and kept a separate account on your books from the receipts of those services outside the city.

A. We have only separated them for the purposes of this investigation; they are not regularly kept on separate books of account.

Q. Well now will you give the revenues as shown by your books received from services outside the city for the year beginning January 1, 1892, and ending September 30, 1902.

1237 Mr. CALDWELL: Counsel for plaintiff excepts to the question as demanding an unreasonable amount of labor of the witness and of the Water Company, and tenders the books showing the accounts called for to counsel for the city as a basis for his examination of this witness.

COMMISSIONER: The defendant will be allowed to put a man to work on the books to ascertain these facts, but the plaintiff will not be compelled or required to do the work.

Mr. CALDWELL: While not dissenting from the order of the Court, but believing it to be the proper order in the case I suggest that possibly, indeed very probably the Water Company will have to furnish some one to interpret the books to the accountant that the city may put upon them for this purpose, and it should properly be provided that all expense of that kind should be borne by the city, such examination of the books to be made in the office of the company.

Q. Then there has been no effort on the part of the Water Company at any time to keep a separate account of the receipts from business outside the city and inside the city, has there?

A. Not in detail, except for the purposes of this investigation.

Q. Is there a single year kept separately as shown by your books?

A. Only as I have stated.

Q. Well have you stated that there was a year kept separately, and if so what year?

A. the collections have been segregated for the year 1900-
1238 1901 as stated.

Q. This was done for the purpose of giving evidence in this case recently, wasn't it?

A. Yes sir.

Q. And was done by going over all the services of the city and outside the city, wasn't it?

A. It was done by adding up in detail the actual revenue derived from services outside the city for that year, as I have previously stated.

Q. Who did that work?

A. The work was done under the direction of the Superintendent.

Q. But who actually did it—what person—name him?

A. I know not whether Mr. Kimball did any of it personally, or to what extent Mr. Robers did it personally, but I suppose that most if it was done by one or both of these gentlemen. I have never inquired as to who actually did it.

Q. You have no personal knowledge of what persons using water under contract with your company, live inside or outside the city, have you?

A. Very indefinite knowledge. I know some of them living outside.

Q. And you have no knowledge of the correctness of the account made up for the year 1901-1902, have you?

A. I simply know that I directed the information to be collated from the books in the local office, and in accordance with my instructions, was furnished with the figures given.

Q. How long and how much labor would it entail to separate the several years, Mr. Wheeler?

A. I do not know.

Q. Hav-n't you stated already that it would take months of labor to separate it on the books—for all the work I have
1239 inquired about?

A. I believe it would take months, in the ordinary course of business, to determine, without serious interference to the business, what the actual revenue has been during the period named of services outside the city limits.

Q. The number of services that your company has had outside the city has been variable from year to year, hasn't it?

A. Yes sir.

Q. And as a consequence the revenues have varied, hav-n't they from that source?

A. Undoubtedly.

Q. The whole of North Knoxville was outside the City until 1897, wasn't it?

A. I do not recollect the exact date of its being included within the city limits. The records will show that.

Q. General Wheeler, give a tabulation of the number of services in the entire plant, and also outside the City March 31 1900 to March 31, 1901, from March 31st 1901 to March 31st 1902, also to September 30th, 1902, and also the metered services at those dates, and the percentages of services outside the City?

A. They are as follows:—

		Entire plant.	Outside city.
Total number of services,	M'ch 31, 1900	3896	259
	" 31, 1901	4323	311
	" 31, 1902	4734	377
	Sept. 30, 1902	4942	433
Metered Services	M'ch 31, 1900	251	26
	" 31, 1901	275	34
	" 31, 1902	1281	70
	Sept. 30, 1902	1407	81

Percentage of services outside City	M'ch 31, 1900	6.65%
	" 31, 1901	7.19%
	" 31, 1902	7.97%
	Sept. 30, 1902	8.76%

1240 Q. Your schedule of rates apply to services outside the city as well as to services inside, does it not?

A. Yes sir.

Q. Now what was the per cent. of the whole services of the company that were outside the city in 1900-1901 and on September 30, 1902?

Mr. CALDWELL: We object to the question on the ground that the witness has previously stated the actual figures, and the result now being called for being an easy matter of calculation.

COMMISSIONER: The exception is sustained.

Q. What is the average expense per service for the year 1900-1901?

A. It may be determined by dividing the total operating expense by the total number of services in and outside the city.

Q. The average income from each service may be determined by dividing the entire income by the number of services also, may it not?

A. It may, but this does not give a fair average of domestic services, because the city's hydrant rental is included in the aggregate income, and there are other large items of income which should not affect any statement of the average income derived from ordinary domestic or manufacturing services.

Q. Is not the service of supplying water to persons outside of the city somewhat more expensive than supplying customers inside the city and nearer the pumping station?

A. That may be a matter of opinion. We never made a computation to determine accurately that question.

Q. Well does not it require more fuel and more power to force water to a distance than to supply it close at hand?

1241 A. It depends upon other conditions than distance, viz: pressure or elevation of the service as compared with the point from which the water is pumped.

Q. Are any of your outside services as high as many of those inside the city?

A. I cannot state as to any particular service. Whether the highest or lowest is within or without the city I am unable to state.

Q. Now under the estimate you have made dividing the expenses between the city proper and the service outside the city, the outside business is very much more profitable than the inside business, isn't it?

A. I have not so stated, nor have I any figures to definitely answer that question.

Q. Well is not such the fact General Wheeler?

A. My previous answer answers that question the best I can.

Q. You have not assigned to the outside business a percentage of the expenses proportionate to the revenues you derive from that business have you, in the estimate you have made?

A. No sir.

Q. You are operating this plant under a franchise granted by the city of Knoxville, are you not?

A. Yes sir and by the State of Tennessee.

Q. And you are using pipes laid along the streets of the city of Knoxville for the purposes of furnishing this outside water, aren't you?

A. Yes sir, by authority of our charter.

Q. In fact you use your whole plant in Knoxville, do you not, for the purpose of supplying this outside water as much as you use it proportionately to supply water inside the city?

1242 A. The outside territory is supplied from the reservoir and high service station of the plant which are located inside the city limits.

Q. Now General Wheeler when you add on these outside services 311 in 1900-1901 don't they add proportionately to the expense of operating the entire plant?

A. They do not sir necessarily, for the reasons which I have stated in my analysis of the sub-division of the expense account.

Q. Then the expense of operating the plant is not increased proportionately by adding the services?

A. Not necessarily. It is in the nature of greater economy of operating any wholesale business over that which is incident to a retail business, that is the increased economy of doing a large business over that of a smaller one.

Q. Then say a plant of 2,000 services would consume a much larger amount of its income than a plant of twice or treble that number of services?

A. Other things being equal that would be approximately true.

Q. General Wheeler, who made up the estimate of the percentage that the ordinance of March 30, 1901 would reduce your pre-existing rates?

A. I instructed Mr. Kimball to do it and it was done by him, or under his direction.

Q. You did not make it or superintend it personally did you?

A. I did not, but directed it to be done as stated.

Q. You know nothing of whether or not it was correctly done?

A. I have ever- reason to believe it was done with substantial correctness.

1243 Q. The question is whether you have any knowledge of that?

A. I don't see that I can give any other answer.

Q. I ask you whether or not you had any knowledge whether it was correct or not?

A. I have already stated that I did not personally make it up.

Q. The item of $11,455.00 for hydrant service was not reduced by the city's ordinance of March 30, 1901, was it?

A. No sir.

Q. The statements you have furnished General Wheeler, of expenses, do not go back of the date April 1, 1900. Will you give a like statement for the year preceding that date, to-wit; from March 31, 1899 to April 1, 1900?

A. I have already given it in total on page "42" of my testimony.

Q. From 1899?

A. Yes sir.

Q. But I mean for you to give it by items as you have given it for the other years?

A. I have not.

Q. Will you give such a statement?

A. If the Master requires it.

Q. And in making this statement I will ask you to show in addition to what you have shown on your former statements the amounts applied to the service outside of the city?

Mr. CALDWELL: I understand the Master has already ruled upon that point. They may take the books and make such statements as they desire.

COMMISSIONER: The witness will hereafter furnish one other year for comparison, and only one other. If another year is asked for, it will be overruled.

1244 A. It is as follows:

Operating Expenses, April 1, 1899, to March 31, 1900.

	Entire plant.	City proper.
Alum	1,231.21	1,087.40
Expense	4,310.56	4,224.35
Fuel	4,096.69	3,618.20
Insurance	323.17	313.47
Filter Station	1,888.64	1,869.75
Pump Station	5,203.73	5,151.69
Repairs	1,318.10	1,242.42
Salaries	7,328.35	6,629.52
Taxes	5,844.80	5,762.20
	31,545.25	29,899.00

Q. I will ask you for a like statement for the year 1896-1897?

Mr. CALDWELL: We except to the question.

COMMISSIONER: I sustain the exception, holding that the defendant has the privilege of employing an accountant to obtain the results from the books.

Mr. PICKLE: Complainant's counsel excepts to the ruling of the court upon the ground that plaintiff- have shown statements of this character for two years and a half and for the purpose of comparison and broadening the basis for computation the defendant should be permitted to show at least two years for the purposes aforesaid.

1245 Q. On page "8" of your deposition General Wheeler, you included in Expense account for the year April 1, 1901 to March 31, 1902, an item of $1156.34 "Water Rates Litigation" and charge this in that account to the City proper—that is the whole of it to the city proper. Was this item for expenses that have accrued in litigation over this ordinance?

A. Yes sir, expenses that had accrued and been paid, but unsettled charges incident thereto are not included.

Q. What does this item consist of?

A. Actual expenses to which we have been put—cost of the litigation which has resulted from the passage of the ordinance.

Q. Well will you give the items of that lumping charge?

A. It consists of attorneys' fees, certified copies of decrees, transcripts, &c. also travelling expenses of attorneys and superintendent to Washington, Nashville and Boston, attendance upon court, and copies of proceedings, telegrams, &c. incident to the litigation resulting from the ordinance.

Q. I notice among the items a receipt of Frank C. Kimball for $200.00, dated June 4th, 1901, stating on its face "to be hereafter accounted for." What was that for Mr. Wheeler?

A. For cash on account of travelling expenses on trip to Boston and to Providence, Rhode Island, and Nashville, Tennessee, including expenses of Mr. Cates, the Company's attorney, all accounted for on final bill for $254.80 dated June 17th, 1901.

Q. What were those trips made for?

A. The trip to Boston was made for consultation as to proper procedure in the litigation already instituted by the city, and on the part of Mr. Kimball I think to obtain information as to rates,

1246 methods, &c. obtaining in Providence, Rhode Island and Nashville, Tennessee. I don't recall whether there was other business incident to these trips or not.

Q. On page "11" of your deposition, under the heading of "Earnings and Expenses" April 1st 1902 to September 30th 1902 I find an item "Water Rates Litigation" $1261.04, the whole of which you have charged as expense to the city proper. I will ask you for the items that make up this lumping charge?

A. They are similar in character, and I will show them to you from the books.

Q. In these items are included the expenses of the trips to Boston and other points, as you have stated?

A. Yes sir.

Q. I notice that you give as cost of litigation paid by old Company $3000.00 on page "38" of your deposition. Do the books show what that item was for, and to whom and when paid?

A. I infer from Ledger page "246" that it was paid to Taylor & Hood, July 1st, 1888 "for services rendered."

Q. Do the books show the nature of the services rendered?

A. They do not sir.

Q. General Wheeler the Register's books show that you conveyed lots Nos. "58-59" in Nelson, Swan & Mabry's Addition to Knoxville to the Knoxville Water Company. From whom did you purchase that property, and at what price, and at what price was it conveyed to the Knoxville Water Company?

A. I cannot speak positively without recourse to my deeds, but I think, if I am not mistaken in the parcel of the property referred to,
1247 that it was property that was transferred to me personally as Trustee by E. J. Sanford, and by me transferred to the Water Company, the amount thereof, I am unable to state. The Register's office, I think will show either in specific amount, or by amount of revenue stamps thereon. At any rate it was conveyed by me to the company at the same price I paid for it.

Q. What was the consideration paid to Sanford, and in what was it paid?

A. It was paid in money.

Q. What is that property used for now?

A. I repeat that I am not positive as to the parcel referred to, but I think it is a part of the land on the hill where the high service station is located.

Q. Was it a part of that property that was exchanged with Arnold?

A. No, sir; I think not.

The further taking of this deposition was adjourned until 2 o'clock P. M.

2 O'CLOCK P. M.

The further cross-examination of General ELBERT WHEELER resumed:

Q. General Wheeler, on page "5" of your deposition, I find among the items of Expense there set out from April 1, 1900 to March 31, 1901, an item for salaries $7805.06, $7024.55 of which is charged against the city proper, and the remainder against that part of the plant outside of the city. I will ask you to itemize this charge, giving the names of officers, and amounts paid to each; also answer same question for the year 1901-1902, and for the six months from March to October 1902, and for the year 1899-1900?

1248 A. Of this amount chargeable to the entire plant, $1,396.96 was paid the Treasurer, which included compensation for clerical assistance in his office, and $931.29 was paid the Supervising Engineer, and the balance was paid for salaries in the local office here, including $1,000.00 annual salary of the company's attorney, Charles T. Cates, Jr. The salary of the Superintendent is

$2,000.00. W. H. Roberts, Cashier, $20.00 per week, or about $1,043.00 for the year. The wages of U. S. Clark, Inspector were at the rate of $10.00 per week, but a large part of these wages were chargeable to other accounts than salary, depending upon the character of the work he did from day to day, our custom being at the end of each week, in making up the pay-roll to segregate total amount paid to employés who do various kinds of work so that for instance labor on extensions shall be charged to Extension Account, labor on new services to be charged to new Service account, or on meter maintenance to its account, and so on. In some weeks nothing may be charged in such cases to "Salary" account, but it all may be charged to accounts ultimately entering into construction, all this depending upon the character of the work done during the week. Further to answer the question as to wages paid the permanent or regular force for the year from April 1, 1900 to March 31, 1901 the items were as follows: F. M. Bankston, office assistant, $9.00 per week to November 7, $10.00 thereafter. H. Nicholson, office assistant, $9.00 per week to September 8, the date his services ceased. Benjamin Anderson, on and off hand, $7.50 per week. July Perkins, porter, $5.00 per week. Miss Semones, stenographer, $5.00 per week from May 28, to Nov. 16, $6.00 thereafter. P. T.
1249 Kimball, street foreman, $900 per year. J. Wethered, plumber, $12.00 per week to April 27, $13.50 to June 1st. D. H. Smith, plumber, $10.00 per week after June 1. John A. Durham, chief engineer, $1500 per year. James Keith, assistant engineer, $14.00 per week. Benjamin Durham, assistant engineer, $14.00 per week. M. F. Galyon, assistant engineer, $14.00 per week. Bud Long, assistant engineer, $15.00 per week until June 1, then $8.75 until August 3, then $14.00 per week. Robert Ferguson, assistant engineer, $12.00 per week until April 21. Verlin McNew, assistant engineer, $12.00 per week from April 20, to May 24. Cal Moore, fireman, $8.75 per week. George Lusk, fireman, $8.75 per week. Sam Grigsby, fireman, $7.00 per week from May 21. Bob Dixon, $7.00 per week from June 8.

For the year from April 1, 1901 to March 31, 1902 the regular force was substantially the same in the number of officers and employés. The salary of the Treasurer was $1,505.22 which included compensation paid clerical assistance. The Supervising Engineer received $1,003.48. There was no change in the salary of the attorney, but the salary of the Superintendent was increased January 1, 1902 to $2,400.00 per year, and of Mr. Roberts to $23.00 per week after October 1, 1901, of Inspector Clark to $12.00 per week after October 1, 1901. No material changes were made in the wages of other employés for that year, and the rates of compensation in said fiscal year substantially obtain up to September 30, 1902.

For the year April 1, 1899 to March 31, 1900 the salaries of the Treasurer and the Supervising Engineer were $1,232.02 and $755.76 respectively. That of Mr. Cates, $1,000.00 and of Mr. Kimball $2,000.00; Mr. Roberts at the rate of $900.00 per year until
1250 May 26, 1899, then $20.00 per week. The other employés occupying positions set forth in detail in statement of 1901-

1902, were in the main the same in that year as were the amounts paid them.

Q. Now General Wheeler as I understand you the entire salary of the President William Wheeler and of the Treasurer Elbert Wheeler and of the Superintendent, F. C. Kimball is charged in all of these statements to operating expenses?

A. Except possibly in some one of the fiscal years stated, a small portion of Mr. Kimball's salary may have been charged to construction account. I cannot say definitely as to this without a detailed examination of the books, but such charge other than operating expense account is but slight. His compensation has mainly been charged to salary account.

Q. Have you in mind Mr. Kimball's salary in other years being charged to other accounts than operating expenses?

A. In the year 1900-1901 $1,500.00 of compensation paid Mr. Kimball was charged to "Salary" account and the remainder to construction account, to-wit: $500.00. In the year 1901-1902 it was all charged to "Salary" account, which item is all included in operating expenses. In the six months ending September 30, 1902 it is likewise all charged to "Salary" account.

Q. How was it for the years preceding 1901 General Wheeler as to all of these salaries of the Supervising Engineer, Treasurer and Superintendent?

A. In the year 1899-1900, total amount paid Treasurer, Supervising Engineer and counsel were charged to "Salary" account and all but $540.66 paid Mr. Kimball was likewise charged. This amount in that year was charged to construction account.

1251 Q. Your attorney's salary is charged to operating expenses for all the years?

A. Yes sir.

Q. Well it has been the practice of your company since you have been in control of it, has it not with the exceptions you have stated, to charge the salary of Supervising Engineer, Treasurer, Superintendent and Attorney to operating expenses?

A. Yes sir.

Q. Now as to the other persons you have named on the salary list, there is some sort of division made of the salary paid them between operating expenses and construction account, is there not?

A. Yes sir, substantially according to the considerations already stated by me concerning them.

Q. Without going into particulars General Wheeler, state in a general way how the division is made and between what particular departments of the work or plant?

A. The compensation paid to what we term simply the office force is charged to "Salary" account; the wages paid the engineers and firemen at the River Pumping Station are charged to Pumping Station account, which is an operating expense account; wages paid employés at the filter station are charged to "Filter Station account" which is an operating expense account; compensation paid to street men, or those doing work of various kinds is charged to such account at the end of each week, determined by the Superintendent or

Cashier, according to well understood rules of subdivision as their work may have been devoted to during the week, and where it may not with perfect clearness be charged to any construction account or repairs account or other account, it is in such exceptional cases charged to "Salary" account. For instance on a rainy day when men cannot work outside, or if there is no work outside call-
1252 ing for the street man, his pay would be charged to "Salary" account and not to an uncompleted construction account for which he rendered no service that day.

Q. Now General Wheeler what do you mean by the "Office force" there?

A. I mean the Cashier and his office assistants regularly employed for the conduct of the office work.

Q. General Wheeler would it require a tedious statement to set out the specific items that make up these several amounts in addition to the salary of the Supervising Engineer, yourself, Mr. Kimball and the attorney of the company?

A. It would require considerable detail work to segregate the compensation paid to numerous employés, who during the year were employed on various classes of work. I am prepared to show you the detailed record of each employé whose wages were thus divided since April 1, 1902. We have no record of sub-divisions in individual cases, except as I have stated, previous to that date, not having previous thereto kept permanent records of such sub-division.

Q. General Wheeler you say you have no record of the segregation or division of these salaries among the several departments prior to April 1, 1902?

A. Not in detail as set forth upon these weekly reports.

Q. Now how was the division in fact made prior to that time in making up your accounts for the several years?

A. I think Mr. Kimball would have to testify as to that, as I am not perfectly clear on that point.

Q. Mr. Kimball furnished you the statement from which you testified on that subject as to former years, did he not?

A. He made up the statement by my direction, taking same from accounts kept in the local office.

1253 Q. When was that division made, Mr. Wheeler, as to years prior to April 1, 1902?

A. I understand it was made at the end of each week when the pay-roll was made up, and the pay-roll sheet stamped as to the account to which each item should be charged, and I understand that this division was made upon the verbal statements of the heads of the various departments rather than upon written reports as have been required since April 1, 1902.

Q. Then there is some record of it in the office, is there?

A. I think not except as it appears upon the weekly pay-rolls, but Mr. Kimball can testify definitely as to this.

Q. When was Mr. Kimball's statement made up from which you have testified on this subject?

A. Since the session of yesterday.

Q. But I mean to all the years prior to April 1, 1902?

A. Statement of "Salary" account is not made up by Mr. Kimball but by myself from the company's books, which statement is the summation of distribution of salaries and wages paid each year respectively by applications of the principles stated for such sub-division.

Q. Now General to make myself clear on page "42" of your deposition you have stated operating expenses for a number of years. Do you know whether there is any division of this salary such as you testify to for these latter years, running through all these years?

A. There was a "Salary" item included in the total operating expenses for each of the years set forth on page "42."

Q. Did it embrace the whole of the salary account in any of those years?

1254 A. It did in each and all of them.

Q. Mr. Kimball made up the statements as to operating expenses and collections found on page "42," did he?

A. No sir I made them myself as previously stated from the Treasurer's books.

Q. Well what I want to know now is what division of salary you made in those several years, if any?

A. The sub-division of wages paid sundry local employés in previous years, was made by whoever was Superintendent, or under his instructions in each of the years stated, by application of the same principles as in the years set forth in detail.

Q. You did not make the division yourself?

A. No sir.

Q. And there is no record of the division on your books prior to April 1, 1902?

A. Not on the Treasurer's books; whether specific record is to be found in the local office of such sub-division previous to April 1, 1902, Mr. Kimball will be able to testify.

Q. You said it was done by the Superintendent or the Cashier How long has Mr. Kimball been Superintendent?

A. Since January, 1899, I think.

Q. Who was Superintendent prior to him, and for how long?

A. William H. Hague, but the exact date when he became Superintendent I am unable just now to state.

Q. And who prior to Mr. Hague?

A. I think it was Mr. James A. Adams, and prior to Mr. Adams was Mr. Charles F. Wood.

Q. Now has Mr. Hague or Mr. Adams or Mr. Wood made any of these divisions?

A. I suppose they were made by them, or under their

1255 supervision while they were Superintendent.

Q. Is there any record of it?

A. I do not know sir.

Q. Do you know that they made any?

A. Personally I do not. I know it was their duty to do so and I am satisfied they did.

Q. Well there ought to be a record of it in the office then, oughtn't there General?

A. That is a matter of opinion. The building up of a system is a process of evolution and it is not claimed that it is yet perfect as respects the management of this company. We are sometimes criticized for requiring too much detail, involving as it does necessarily expense, but to such extent as we have adopted it, it has been upon the judgment of the officers of the company from a business standpoint.

Q. If you have a record of divisions of the salaries made by any of the predecessors of Mr. Kimball, I would like for you to produce it?

A. I shall be glad to do so if possible. We have no reason for withholding it.

Q. Well will you ascertain if there is any such and produce it?

A. I find that the present system began with the week ending June 29, 1901, and Mr. Kimball informs me that previous to that date the local office has no record of anything analagous to this system of written record of sub-division from week to week.

Q. General Wheeeler did you or your company furnish to the "Municipal Journal and Engineer" or to Dudley E. Waters, Ex-President of Board of Public Works, Grand Rapids, Michigan, a statement concerning your company for use of publication by him during the year 1902 or at any other time?

1256 A. What kind of a statement do you refer to?

Q. Well a statement showing the population of the City of Knoxville, source of water supply, number of pumping stations, number of pumps, daily capacity of stations in gallons, number of standpipes and capacity, reservoirs and their capacity, number of meters, number of taps, percentage of meters to taps, average number of gallons of water pumped daily, number of gallons per capita, number of gallons per tap, miles of mains in city, daily coal consumption of coal in tons, average price per ton, and some other particulars?

A. I don't recollect; we are continually requested to give such data, and as a rule we pay no attention to such requests. We may have given such information to Mr. Waters, that is covering some of the periods you ask, but I am not certain about it.

Q. Can you not recall the fact that you gave him such information during the present year?

A. I don't recollect anything definitely about it. I remember the name of Dudley E. Waters.

Q. Would such a statement have been given by you, or by some other officer of the company?

A. I hardly think any other officer of the company would, and as I have stated, as a rule we do not reply to such inquiries, which are numerous.

Q. You will not say that you did not furnish such a statement?

A. No sir I will not, without reference to my files.

Q. Are your files accessible?

A. They are in Boston; they are not here, and it is uncertain if

I would keep any copy of such statement if I had made it,
1257 as they are usually called for on their own blanks.

Q. I will ask you if your furnished such a statement to file a copy of it as an exhibit to your deposition?

A. I think I would not be able to file a copy of it, as I have just stated we probably answered it, if at all, on a blank furnished by him, as we thought it not of sufficient importance to us to keep a record of it.

Q. Well now General Wheeler I find in your statement of expenses for the year April 1, 1900, to March 31, 1901, on page "5" of your deposition an item for alum $1,310.78. I will ask you how this item is ascertained and made up?

A. On the first day of April of each fiscal year, we take account of stock of supplies on hand, and this rule as applied to the alum account, undoubtedly charged to the alum account, the cost value of alum then on hand. As alum was purchased from time to time during the fiscal year, the cost thereof was charged to alum account. At the end of the fiscal year stock was again taken and the cost value of alum then on hand was subtracted from the sum total of the items previously stated and the net remainder is the amount you refer to for that fiscal year.

Q. What was the amount of alum on hand on the 31st of March 1900, and what amount was on hand at the end of the year, to-wit; March 31, 1901?

A. April 1, 1900 the cost value of alum on hand was, $526.92; March 31, 1901 the cost value of alum on hand was $567.60.

Q. What purchases of alum and at what price were made during the year, General?

A. The first purchase was by bill paid August 13, 1900, $480.00,
at $1.60 per hundred weight. The next purchase was by
1258 bill paid December 17, the same price and same amount, and subsequent purchases were made by bills paid April 15, 1901, but charged in the fiscal year previous, because it was received and partially used during that fiscal year, the price and amount being the same. I would add that the net balance of the account at the end of the year is slightly affected by sales of alum bags or barrels, the proceeds of such sales being credited to the account.

Q. These are the prices actually paid, General Wheeler?

A. That is what I said sir.

Q. Who paid the amounts?

A. I did sir.

Q. From whom were the purchases made?

A. Harrison Brothers and Company, 117 Fulton street, New York.

Q. Were there no discounts on these bills?

A. If we paid them within 15 days, we received a one and a half per cent. cash discount.

Q. Had you a contract with the company named to furnish you alum at a stipulated price?

A. Usually.

Q. These bills were discounted one and a half per cent., were they not?

A. In some cases.
Q. To what extent?
A. Bill paid January 17, 1902 was discounted at that rate to the amount of $7.20. I do not find that other bills paid that year were discounted.
Q. Do you know whether they were or not?
A. None of the others that I find were so discounted.
Q. Does that discount enter into your calculation here?
A. Yes sir.
Q. In what way, General?
A. It decreases the net amount paid for alum.
Q. At what price have you figured the alum per hundred
1259 in this statement you have made?
A. At the price actually paid.
Q. Now we will go to the year 1901-1902. Will you please state how you got the item of $1,494.98 for alum?
A. In exactly the same manner as in the previous year. The price paid was the same.
Q. What was the amount on hands at the beginning of that year?
A. $567.60, the same amount as I stated was on hand at the close of the preceding fiscal year.
Q. And what amount on hand at the end of the year?
A. $495.60.
Q. Now what purchases were made during that year?
A. We made purchase of three bills during the year; the same amount in each case substantially as I have stated.
Q. Give the dates?
A. June 3, 1901, August 29, 1901, and January 16, 1902.
Q. Well now what purchases did you make subsequent to that date and prior to September 30, 1902?
A. July 8, the same amount and same price—one bill.
Q. What was the amount on hand September 30, 1902?
A. I do not know. We did not take account of stock, as I previously stated, on that date.
Q. So the item for the last six months is an estimate one is it?
A. It is.
Q. General Wheeler what was the alum account for the year 1899-1900?
A. $1231.21.
Q. Can you give it for the year 1898-1899?
A. $1,554.94.
Q. Can you give it for the year 1897-1898?
A. $1,011.62.
Q. And for the year 1896-1897?
A. I haven't that before me.
Q. Can you give it without serious trouble?
1260 A. No sir we did not keep a separate alum account previous to that year.
Q. Do you know what you estimated it at in estimating the expenses of that year?

A. We did not estimate it.

Q. Well on page "42" you estimate the expenses of operating the plant at *at* $27,116.56. To what extent does alum account enter into that estimate?

A. That item is not an estimate; it is an actual expenditure.

Q. Well then to what extent does alum enter into it?

A. The purchases of alum in that year aggregate $1,310.76.

Q. Was that amount used during the year?

A. Approximately, but I cannnot state definitely not knowing what amount was on hand at the beginning or end of the year.

Q. Was that the amount you estimated as entering into that statement?

A. In making up the actual cost at the end of the year, we took into account stock on hand at the beginning and end of the year, as I have previously explained, and the net result by such calculation was carried into profit and loss account for that year.

Q. Who made that calculation?

A. My bookkeeper, probably under my direction.

Q. Well now for the year 1895-1896, you estimate the operating expenses at $26,414.63 on page "42" of your deposition. To what extent does alum enter into that?

A. The purchases that year seem to have been $737.11.

Q. Well you have estimated on page "42" of your deposi-
1261 tion as operating expenses for the year 1894-1895 $28,019.69. Will you state to what extent alum enters into that amount?

A. Our purchases that year appear to have been $1,225.83.

Q. On page "42" of your deposition you have estimated the operating expenses for the years 1893-1894 at $19,596.09. To what extent does alum enter into that amount?

A. The only purchase I find was to the amount of $52.80.

Q. For the fifteen months beginning January 1, 1892 and ending March 31, 1893, you have estimated on page "42" of your deposition the operating expenses at $31,785.18. To what extent does alum enter into that amount?

A. I think we used no alum that year. I do not succeed in finding any.

Q. Has the price of alum been uniform during this period I have inquired about, General Wheeler?

A. I think it has been substantially uniform for the same grade of alum—the prices paid have ranged I think from 1¼ cents to 1.6/10.

Q. For what purpose do you use alum in supplying water?

A. For the purpose of coagulating the clay suspended sediment in it.

Q. Turning to page "5" of your deposition, I find in the statement of the expenses of your plant for the year beginning April 1, 1900 and ending March 31, 1901 an item of $5,431.15 for "Fuel." State how this item is made up?

A. Upon the same principles exactly as obtain with the alum account.

Q. What purchases of fuel did you make during that year and at what price?

1262 A. Stock on hand at the beginning and end of the year and purchases during the year were as follows:—

Fuel Account, April 1, 1900, *to March* 31, 1901.

April	1. On hand.....	85.5	Tons	Coal	at	$1.18...	$100.79
	" "	43.5	"	"	"	1.45...	63.08
April,	Purchased	29.2	"	"	"	1.40...	40.88
"	"	30.62	"	"	"	1.45...	44.40
"	"	2.39	"	"	"	1.75...	4.97
"	Labor unloading 4 cars coal				"	.90...	3.60
"	purchased.....	231.22	Tons	Coal	at	1.18...	272.84
May	"	21.70	"	"	"	.75...	17.17
"	"	20.00	"	"	"	1.65...	33.00
"	"	21.40	"	"	"	1.75...	37.45
"	"	63.030	"	"	"	1.18...	74.37
"	"	183.450	"	"	"	1.65...	302.70
June	.....	222.945	"	"	"	1.60...	356.71
July	.....	328.245	"	"	"	1.60...	525.29
August	.....	325.505	"	"	"	1.60...	520.81
Sept.	.....	240.390	"	"	"	1.60...	384.62
October	.....	327.440	"	"	"	1.60...	523.90
November	.....	291.755	"	"	"	1.60...	466.81
December	.....	394.580	"	"	"	1.60...	631.32
January	.....	241.147	"	"	"	1.60...	385.83
February	.....	272.358	"	"	"	1.60...	435.77
March	.....	185.125	"	"	"	1.60...	296.20
		3,557.500					5,522.51
Deduct coal on hand M'ch 31, 1901		57.100	"		"	1.60...	91.36
Total used during year.....		3,500.400	"	costing.....			$5,431.15

1263 Q. Now on page "8" of your deposition you have stated as part of the expenses of operating the plant from April 1, 1901, to March 31, 1902, an item for fuel of $3,509.81. Is this item made up in the same way as you have already stated?

A. It is.

Q. What were your purchases of coal during that year, and at what price?

A. Coal on hand at the beginning and end of the year, and purchases during that year, were as follows:—

Fuel Account, April 1, 1901, to March 31, 1902.

April	1. On hand.....	57.100	Tons	Coal at	$1.60...		$91.36
"	Purchased.....	313.550	"	"	"	1.60...	501.68
May	"	141.020	"	"	"	1.60...	225.63
"	"	16.120	"	"	"	1.35...	21.76
June	"	267.370	"	"	"	1.35...	360.95
July	"	271.695	"	"	"	1.35...	366.79
August	"	192.130	"	"	"	1.19...	228.63
September	"	245.260	"	"	"	1.19...	291.88
October	"	274.140	"	"	"	1.19...	326.23
November	"	194.225	"	"	"	1.19...	231.14
December	"	153.210	"	"	"	1.19...	182.32
January	"	214.645	"	"	"	1.19...	255.42
February	"	186.395	"	"	"	1.19...	221.81
March	"	185.235	"	"	"	1.19...	220.42
		2,712.095	"	costing			$3,526.02
Deduct coal on hand March 31, 1902.....		13.625	"	coal at 1.19.....			16.21
Total used during year		2,698.470	"	costing			$3,509.81

1264 Q. Please make the same statement for the last six months?
A. It is as follows:—

Fuel Account, April 1, 1902, to September 30, 1902.

April	1. On hand...	13.625	Tons	Coal at	$1.19	per t...	16.21
"	Purchased	205.830	"	"	"	1.19 " ...	244.93
May	"	270.93	"	"	"	1.19 " ...	322.41
June	"	169.62	"	"	"	1.19 " ...	201.85
July	"	184.00	"	"	"	1.19 " ...	218.96
August	"	176.23	"	"	"	1.19 " ...	209.71
September	"	204.07	"	"	"	1.19 " ...	242.84
Total.....		1,224.305	"	"	costing.....		$1,456.91

Q. And also the same statement for the year 1899-1900?

Mr. CALDWELL: We object to the question because we think it is going beyond the proper limits of the case.
COMMISSIONER: I sustain the exception.

Q. On page "42" of your deposition you have stated that the operating expenses of your company for the year 1899-1900 was $31,545.25. To what extent does fuel enter into this item?

Mr. CALDWELL: We object to that question.
COMMISSIONER: I sustain the objection.

Q. You have made like estimates, or a statement of operating ex-

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penses for the several years from 1899 back to January 1,
1265 1892. I will ask you to make a like statement as to all those years?

Mr. CALDWELL: We object to the question on the grounds above stated.

COMMISSIONER: I sustain the exception.

Mr. PICKLE: The plaintiff excepts to the ruling of the Master as cutting off all inquiry in regard to the reasonableness of the witness' statement as to operating expenses for the years inquired about. This exception is especially pertinent as to the year 1899-1900, as that was the year immediately preceding the passage of the ordinance complained of in this case and the coal or fuel accounts of both years necessarily under the witness' former statements run into each other.

Mr. CALDWELL: If the court thinks this evidence proper to go into the record, we tender the books of the company to the defendant for examination upon those points.

Mr. PICKLE: Defendant insists that on the examination of the witness he has made statements of previous years as to these particular items and we have a right to test their accuracy, and statements of gross items should be permitted to be inquired into.

Q. You have an item on page "5" of your deposition entering into the expense account for the year 1900-1901 denominated "Expense" $2976.16, of which you assign $2,916.64 to the city proper and the balance to that part of the plant outside of the city. What does this item consist of General Wheeler?

A. Sundry payments chargeable to "Profit and Loss" ac-
1266 count which are not properly of entry in any of the other profit and loss accounts.

The further taking of this deposition was adjourned until Wednesdy morning December 17, 1902, at 9:30 o'clock A. M.

WEDNESDAY MORNING, *December* 17, 1902—9:30 o'clock a. m.

The further taking of this deposition was resumed.

(Continuation of Examination by Mr. PICKLE:)

Q. General Wheeler, how was the amount of coal on hand at the end of a year ascertained?

A. I suppose by measurement of the pile of coal in the bins.

Q. Was there a record made at the time of the amount?

A. Yes sir, and statement of such amount entered in the stock account at that period.

Q. Now what amount of coal had you on hands the 30th of September 1902?

A. Practically none, as it was impossible to obtain a supply beyond our immediate daily needs, and not infrequently at about that time we lacked even a day's supply on hand owing to the coal famine generally existing.

Q. Do you personally know how the fact is?

A. I wasn't in Knoxville at that time, but was so specifically informed by the superintendent.

Q. I see the last purchase of 204.07 tons was in September 1902 on the statement that you have rendered. What date in September was that purchase made?

A. That total number of tons is the total of deliveries during the month, such deliveries being made from time to time as
1267 suited the convenience of the coal company, or met our requirements.

Q. From whom did you make your purchases of coal?

A. The Proctor Coal Company.

Q. For what period?

A. Contracts for coal have been made with this company annually for the last two or three years.

Q. Prior to that time, from whom did you purchase?

A. Various dealers. The Black Diamond Coal Company at one time had a contract for a year, and our purchases for several years past have been mostly from these two companies, and more largely from the Proctor Coal Company than the other.

Q. Will you give me the totals for fuel embodied in the operating expenses for the years back of March 31, 1900?

A. For the year ending March 31, 1900, the total "Fuel" charge was $3027.44.

Q. Will you give it back a few years previous to that for comparison?

Mr. CALDWELL: I object to that as we have given a total for the year ending March 31, 1900. We do not object to giving the information but to the amount of labor involved in the work of tabulation, &c.

COMMISSIONER: We have now 3 years and six months given, and I rule that is enough, and I sustain the exception to any further inquiries on that subject.

Q. General Wheeler, I will ask you if the fuel expense for the year from April 1, 1900-1901 is not abnormal, in that the coal was unusually high during most of that year or in fact all of that year?

A. The larger amount paid for coal in that year is mani-
1268 festly due *first:* to a higher price which we were obliged to pay for coal than we were required to pay for the last nine months of the following year and the first six months of the current fiscal year, as shown on detailed statements which I have already submitted, and *second:*—the larger expenditure for fuel is due to the larger quantity of coal used during that year as compared with the year and a half since, which larger amount of coal is undoubtedly due to the less efficient pumping machinery than we have used in the last year or two, that is, since the last pumping engine was installed.

Q. I see that in the year 1900-1901 you used 3500.4 tons of coal at a cost of $5431.15, and for the year following 2698.47 tons at a cost of $3509.81, making a difference in favor of the latter year of 801.93 tons and a saving of expense of $1921.34, although you paid

in the earlier part of the latter year $1.60 and $1.35 for coal. This difference resulted largely in the saving of coal by the institution of new machinery, did it not?

A. To a considerable extent, as I stated.

Q. The number of tons of coal represents the savings exactly, don't it, 801.93 tons?

A. It does providing the actual duty and work performed by the pumps were constant—that is the same in each year.

The further taking of this deposition was adjourned until 2:00 P. M. Wednesday December 17th, 1902.

1269 WEDNESDAY, *December* 17, 1902—2 o'clock p. m.

The further cross-examination of General ELBERT WHEELER resumed.

Q. General Wheeler isn't it a fact that a greater service and by that I mean a larger water supply was furnished by the Water Works in 1902 than in 1900-1901, there being on March 31, 1900, 3,896 services, increasing during that year to 4,323 and increasing between the 31, March, 1901, and the 31, March, 1902, to 4,734?

A. There were a greater number of services at the close than at the beginning of each year.

Q. The increase in services is correctly stated in the above question are they not, General?

A. I think so, sir.

Q. Was there any increase in hydrant service during that time?

A. No, sir, not in the city hydrants.

Q. From the tables of "Fuel" expense it appears that for the year 1901-1902 you consumed 2,698.47 tons at a cost of $3,509.81, and that for the six months following, towit; from April 1, 1902, to September 30, 1902, you consumed 1,224,305 tons at a cost of $1,456.91, indicating an annual tonnage expense for 1902-1903 of 2,448.61 tons at a cost of $2,913.82. This makes a further saving over the year 1901-1902 of 249.86 tons and of $595.99?

A. If you assume that no more coal is required for the six months following September 30, 1902, than in the six months ending on that date, and if it be assumed that the prices of coal in the year from 1902 to 1903 be the same as in the preceding year; as a matter of fact however the statement for the year ending March 31,
1270 1902, shows that for the first three items in "Fuel" account to that date we paid $1.60 per ton, and in the three items following $1.35 per ton, whereas all of the items of purchase on fuel account April 1, 1902, to September 30, 1902, were at $1.19 per ton. Therefore the comparison you have made is not a proper one. Furthermore the comparison is not proper because of the fact that since September 30, 1902, contract for fuel has been made for a year at an increased price per ton, viz; $1.38, which would make the cost of fuel in the term ending March 31, 1903, correspondingly greater.

Q. That would make the average price $1.28½ would it not, General, during the year?

A. I do not think it proper to average except you take into account the actual quantity of coal purchased under each price.

Q. At any rate if the operation of the plant for the six months following September 30, 1902, shall consume no more fuel than the first six months of the fiscal year did, there will be a saving of 1051.79 tons between the year 1902-1903 and the year 1901, wouldn't there?

A. I do not know, sir, I have not figured it.

Q. Your plant at Knoxville is conveniently situated to the coal fields, is it not General Wheeler?

A. We consider it fairly so, yes, sir.

Q. Is it not in the midst of a coal producing section?

A. I believe so.

Q. You purchase the coal at the door of the plant almost, don't you?

A. We purchase it delivered at the plant.

Q. Well it is from mines in the vicinity of Knoxville?

A. I have no knowledge just what mines it comes from;
1271 we buy it from local dealers.

Q. Was the coal for the year 1900-1901 furnished under a contract, and if so with whom and was it in writing?

A. It was by written contract with the Proctor Coal Company for deliveries in June and thereafter, but I am not positive as to the two months preceding June, in which variable prices were paid. I believe that no formal contract covered purchases in April and May of that period.

Q. General Wheeler, hasn't the price of coal since you have been operating this plant ruled about $1.20 per ton or less?

A. The price we have paid has not ruled at that figure, except as shown on the statement. It should be remembered that the price we paid includes cartage charge from the railroad station to our pumping station, which we are told cost- about 50 cents or thereabouts.

Q. You buy it to be delivered by the seller, do you not?

A. Yes, sir.

Q. And at the prices stated in your schedule?

A. Yes, sir.

Q. Excepting in the year 1900-1901 and part of the following year, have you ever paid the prices there stated for coal for the operation of your plant?

Mr. CALDWELL: We except to the question as already being ruled out by the Master.

COMMISSIONER: Just answer from your general knowledge without giving the figures.

A. I don't recollect definitely what we have paid in earlier years.

Q. General, do you take or receive and read the "Municipal Journal and Engineer," a publication that seems to be issued at Grand Rapids, Michigan?

A. I do not, sir.

1272 Q. You know of the Municipal Journal and Engineer, do you not?

A. I do not know it sufficiently well to know whether you correctly quote its name. I may have seen it but I am not familiar with it.

Q. I will ask you if it is not a fact that up to the year 1900-1901, the average annual cost of fuel for your plant wasn't but $2,836.56 and that your company so reported the fact to the Municipal Journal and Engineer some time during the year 1902?

Mr. CALDWELL: We object to the question.

A. I don't believe our company ever made such a statement, but I have no definite recollection upon the matter. I am quite sure that I would not have taken the trouble to make such a computation, or have thought it of any material value to direct any one else to do*ing* so.

Q. General Wheeler, does this fuel account—it covers your entire fuel supply, does it?

A. Except what we use in this office building, the cost of which is charged in the expense account.

Q. Do you get it from the same parties?

A. Usually I think.

Q. It is a different quality of coal though, isn't it?

A. I do not know about that.

Q. Turning to page "5" of your deposition I find in the table of operating expenses for the year 1900-1901 an item for insurance $564.43, $547.17 of which you charge to the city proper and the balance $17.26 to the part of plant outside of the city. Does this item include casualty or accident insurance to any extent; if so to what extent?

1273 A. It does include such insurance as well as fire insurance on buildings owned by the company. The amount paid for casualty, $172.61 is, as I have previously stated on page "6" of my deposition.

Q. What did this casualty insurance cover, Mr. Wheeler?

A. It insured against liability to damage, or suits for damage incident to construction of new mains, services, &c., and generally against accidents happening to employés of all kinds.

Q. On page "8" of your deposition I find in the statement operating expenses for the year 1901-1902 an item of insurance $238.19, the whole of which is charged to the city proper. Does this item include any casualty insurance?

A. No, sir.

Q. Was your company during that year carrying any casualty insurance?

A. No, sir, or at least if it were carrying any it had been for a small fraction of the year which had been paid for in the previous year, but I am not positive as to the date of the expiration of the policy.

Q. On page "11" of your deposition I find in the statement of

operating expenses for the six months from April 1 to September 30, 1902, an item of $102.50 for insurance, the whole of which is charged to the city proper. Does that include any casualty insurance?

A. No, sir.

Q. Did your company carry any casualty insurance during that period?

A. Not of that character. It carried, as it did in the preceding year, what we call "steam boiler insurance" which has an element of casualty insurance in it incident to possible explosion of boilers, but not of the character of casualty insurance as we ordinarily so call it.

1274 Q. Is that boiler insurance included in these items?

A. Yes, sir.

Q. To what extent in these several items, General Wheeler?

A. In the year ending March 31, 1901, is included an item of $125.00 boiler insurance, which was the premium upon a policy for three years mostly subsequent to date of January 16, 1901, when it was paid.

Q. Had you any insurance for the year 1899-1900 and if so what amount?

A. Yes, sir, $323.17.

Q. To what extent did boiler or casualty insurance enter into that item General?

A. None at all.

Q. Did you carry any casualty or boiler insurance during that period?

A. Yes, sir, but it was paid for on the policy previously issued.

Q. Turning to page "5" of your deposition I find an item in the statement of operating expenses for the year 1900-1901 of $2,270.28 of which $2,247.58 you charge to the city proper, leaving $22.70 chargeable outside the city. Have you books showing an itemized statement of this item?

A. Yes, sir.

Q. Will you state in a general way what makes up this item?

A. The principal part of it is the sum total of wages paid the employés at that station, and the remainder of it would be amounts paid for such items as lubricating oil, artificial lighting of the station, and any other small accounts which are distinctly chargeable to that station other than repairs or fuel, all of which items are charged to their respective accounts.

Q. Is any part of F. C. Kimball's salary charged in this

1275 $2270.28?

A. No, sir.

Q. Is the corresponding item for the year 1901-1902 and for the six months from April to September, 1902, made up in the same manner?

A. They are.

Q. What was the item for "Filter Station" for the year 1899-1900?

A. $1888.64.

Q. And made up in the same manner?

A. Substantially, yes, sir.

Q. General Wheeler, I notice that the item "Filter Station" is $2270.28 for the year 1900-1901 and $2561.46 for the year 1901-1902, and as indicated for the six months from April to October, 1902, it would be something over $2100.00. What is the reason for the difference between the expenses of this station for these several years?

A. The larged amount appearing in the statement of 1901-1902 appears to be mainly due to replacing, to a large extent, the sand in the filters, which was not necessary to any such extent either in the year preceding or since.

Q. How is the difference between the year 1899-1900 when the expense was $1,888.64 and the year 1900-1901 when the expense was some $2,270.28?

A. The apparently smaller amount charged to "filter station" in that year is due to entry of an item correcting entry of previous year by which the net balance carried into profit and loss account during the year in question was smaller than it otherwise would have been.

Q. When was that entry of correction made?

A. In closing the books for that fiscal year.

Q. What would the item have been, properly excluding
1276 this correction?

A. The balance of that account for that fiscal year should have been if properly kept by itself, $413.96 greater than the amount I gave, making total for that account $2,302.60.

Q. Now I ask you what was the item for "Pump Station" for the year 1899-1900?

A. $3,982.23.

Q. On page "5" of your deposition in statement of operating expenses for year 1900-1901 I find item "Pump Station" $3,948.19, $3,908.71 of which you charge to the city proper, leaving $39.48 against the plant outside the city and on page "8" of your deposition I find corresponding item for the year 1901-1902 of $4,603.74, $4,557.70 of which you charge against the city proper, and on page "11" of your deposition I find a corresponding item of $1,987.70, $1,967.82 of which you charge against the city proper. How are these items made up and of what do they consist?

A. Substantially on the same principles as applied to the filter station. The larger part of them is for labor regularly employed at the River Pumping Station, while the balance in each of the periods named is made up of such small items as artificial lighting, oil, waste &c., that is items which unquestionably are chargeable to the Station, not including repairs or fuel.

Q. For the years 1899-1900 and 1900-1901 and for the six months from April 1, to September 30, 1902, the figures indicate that the expenses of this station are between $3,900.00 and $4,000.00, but in the year 1901-1902 the charges are $4,603.74. How do you explain this difference of about $600.00?

A. Through change in accounting of sundry supplies
1277 which were charged against the account at the beginning of the fiscal year and were not so charged at the end of the fiscal year, these supplies being in the nature of special castings, piping and fittings which we considered should not be charged to station account but carried in the general account of supplies, although the practice previously appears to have been to charge them in "Pump Station" account as if they had been used. This item which appeared at the beginning of the fiscal year was $692.09 as compared with corresponding item at the end of the year, to-wit; $38.31, a difference of $654.78, which subtracted from the account page "8" of my deposition for the year ending March 31, 1902 would leave as such item for that fiscal year $3,948.96.

Q. So that item to that extent is modified by the change in your method of keeping your books at the beginning of that year?

A. Yes sir.

Q. Did the same method of keeping books prevail during the six months following?

A. We have not closed the books for the six months following, therefore such an item would not be taken into account for the last six months. The account was charged at the beginning of the six months with that item of $38.31.

Q. So that item of $38.31 enters into the subsequent six months, does it?

A. Yes sir, as it properly should.

Q. No such item had ever entered into the pump station account prior to 1901-1902, had it?

A. Apparently similar methods of accounting for such supplies were used in the three years previous to March 31, 1902.

Q. You say "apparently" what do you mean by "apparently"?

A. It appears from the books that they had been used.

1278 Q. So you say the same method had prevailed for three years previous?

A. Yes sir.

Q. Well General Wheeler, you say that the difference between the "filter station" account in the year 1901-1902 and other years being some hundreds of dollars greater than the year 1901-1902 was accounted for by the fact that the sand in the filters had to be changed. How frequently is this required to be done?

A. It depends largely upon the work to which the filters are subjected, and maybe a matter of judgment as to the extent to which the sand in the filters may be reduced before replacing. There is no rigid rule by which to replace it.

Q. In practice and in fact, how often have you renewed it?

A. I would need to refer you to the superintendent as to that question.

Q. Had it ever been changed prior to that year?

A. Yes sir.

Q. Can you state when?

A. I cannot, because changes to a greater or less extent are not infrequent—in some filters at some times and in others at other times, I think.

Q. Can you furnish me the data asked for; that is how frequently it has to be changed in any particular filter or filters?

A. No sir I cannot.

Q. General Wheeler, on page "5" of your deposition I find in your statement of operating expenses for the year 1900-1901 an item denominated, "Taxes" $8,182.02, of which you charge $8,161.73 to the city proper, leaving $20.29 for property outside the city. What property outside of the city do you assign to this $20.29?

A. That property which is not used for the operation of
1279 the plant within the city limits.

Q. Of what does it consist?

A. I think it is the Tillery Springs property, but if you want me to explain definitely, I shall have to refer to the record.

Q. Do you estimate that this $20.29 represents the taxable value of your plant outside?

A. I have stated that it was that portion outside the City that is not used for the operation of the plant inside the city limits, and it is not an estimate, but the actual amount paid on such real estate during that year.

Q. Well you have heretofore estimated that 12½% of your plant lies outside the city—that is the value of your plant lies outside the city—and is not used to supply water inside the city and that 12½% of the income of the plant should be assigned to property outside the city. Now what per cent. of taxes do you assign to property outside the city?

A. You must pardon me but I have not given any such percentages as you state, and I have stated the basis for such percentages of income as were derived upon property outside the city limits. I do not see that the percentages or bases therefor bear any relation whatever to each other.

Q. How many miles of pipe have you outside the city?

A. I do not know sir.

Q. You have a standpipe that is estimated at several thousand dollars outside the city, haven't you?

A. I do not know anything about the estimate upon it. We have a standpipe that is on the outside that is used for the operation of the plant on the inside.

Q. It is also used for the operation of the plant outside?

A. Yes sir.

1280 Q. Isn't the whole plant used for supplying water outside as well as inside the city.

A. No sir, the pumping stations and filter plants as well as sundry pipe systems in various directions are used for the supply of outside territory in their respective localities.

Q. The filter station is used in the same way for general purposes of the plant isn't it?

A. Yes sir.

Q. And high pressure the same?

A. High pressure for certain limited districts only—some outside and some inside.

Q. And you think this is an equitable apportionment of the taxes?

A. I do.

The further taking of this deposition was adjourned until Thursday morning, December 18th, 1902 at 9:30 A. M.

THURSDAY MORNING,
December 18*th*, 1902—9.30 o'clock a. m.

The further cross-examination of General ELBERT WHEELER resumed.

Q. I find a similar item in the statement you have rendered for operating expenses for other years, with a similar division. These items are explained in the same way as you explained the item we have just considered, are they, General?

A. They are.

Q. Now you have stated that privilege or license taxes enter into these amounts to some extent, will you please explain to what extent?

A. In 1900-1901, $1121.50 (E. & O. E.). For the current fiscal year $1161.50 has actually been paid; one-half of this amount, viz: $580.75 is properly chargeable to the six months ending September 30, 1902, and it is so accounted in the statement
1281 given.

Q. General Wheeler I see that for the year 1899-1900, the item for expenses is $4051.43 and for the year 1900-1901 $2,796.16 and for subsequent years, smaller sums. What is the cause of the discrepancy in the expense account between those years?

A. In the year ending March 31, 1900, we paid $600.00 rent for office, which expenditure does not appear in the later years, because we purchased this office building. We also paid $481.86 expense incident to the Lonsdale-Beaumont Water Company plant, which after consolidation, on account of operation from the main station, the expense was largely reduced. We also paid during that year $100.00 toward the Carnival in the city. Outside of these three items I find nothing material in amount; such expenditures cannot be regular or constant altogether.

Q. Now what was the nature of the payment you made on account of the Lonsdale-Beaumont plant, General?

A. Payments of the same character as were constantly being paid, but which in many items it was necessary to implicate while the two plants were being operated independently. For instance, rent and office expenses incident to operation of the Lonsdale Company previous to consolidation and termination of such charges. These expenses in the Lonsdale-Beaumont plant also included "spring rent" which we ceased to pay as soon as we began to supply that territory from the Knoxville Water System.

Q. None of these items would be included in expense account of subsequent years then?

A. No sir, except as we may have contributed something to Carnivals since, but I don't know the exact amounts. The rent
1282 item ceased with that year and substantially all of the items making up the amount of $481.86 likewise ceased.

Q. Well now there is a difference in this item of expense between

1900-1901 and 1901-1902 of over $400.00. How is that difference explained General?

A. The excess of expenses in 1900-1901 appears to be due largely to expense of removing the Lonsdale-Beaumont gravity pipe line, which pipe line was removed to some extent when use of the springs by which that system was supplied ceased. In addition to this legal expenses charged to expense account were a little larger apparently than in the following years.

Q. Where was this pipe line situated and what was the amount of expense incurred in its removal?

A. $559.54, which is more than the difference between the expense account for the two years compared. It was the pipe line running from the several springs constituting the source of supply of the Lonsdale-Beaumont Water Company to the pumping station of the company.

Q. It was dead pipe and outside the city, wasn't it General Wheeler?

A. It was all outside the city and of value to us much beyond the expense of taking it up for use in other parts of the system.

Q. It was no longer of any use where situated?

A. No sir.

Q. Now on what account were additional attorney's fees over and above your salaried attorney incurred for that year?

A. I do not know the details of those items.

Q. Well can you give the amount and to whom paid?

1283 A. The total amount of "Legal expense" charged in expense account for the year 1900-1901 is $762.50 (E. & O. E.) and the corresponding item in the year following is $76.55. The larger part of the items in the first year mentioned was paid to Mr. Cates, but the account includes sundry travelling expenses, transcripts, &c. from the records.

Q. To whom was the part not paid to Mr. Cates, paid?

A. They were items on the weekly disbursement reports of the superintendent amounting to $4.40. The remainder was paid to Mr. Cates in six items.

Q. Who was your regular attorney at that time, and at what salary?

A. $1000.00 a year.

Q. His regular salary is carried into the item of "Salary" in these accounts?

A. Yes sir.

Q. When did you raise your regular attorney's salary, and to what sum and for what reason General?

A. April 1st, 1899 to $1000.00 for the reason that we considered his services worth the amount paid.

Q. Have you raised it since?

A. No sir.

Q. It still stands at $1000.00?

A. Yes sir.

Q. Have you not carried it into "Salary" account of some of these years at $2000.00?

A. No sir.

Q. What were the nature of the services—I mean in regard to what matter were the services rendered for which you paid this additional $700.00 to him in the year above referred to?

A. I do not recall; I need to refer you to Mr. Cates for that.

Q. Well was it in regard to the litigation over this ordinance, either pending or expected?

A. I cannot say definitely.

1284 Q. Going back for a moment General Wheeler, I will ask you if the pipe, for the taking up of which you embody an item of about $550.00 expense as above stated, wasn't used in making additions, or a reconstruction of the plant?

A. Undoubtedly it was, to the extent that it does not still remain as supplies on hand, but we deemed the expense incident to removing it, accomplishing as it did, so far as the individual pipe was concerned, no valuable purpose to the company, a proper charge against expense and therefore profit and loss account.

Q. It constituted a part of the Lonsdale-Beaumont plant before it ceased operation and is either in this plant now or constitutes a part of the construction supplies of the plant, doesn't it?

A. Yes sir.

Q. The figures in the tables you have given of operating expenses, indicate a further reduction of operating expenses for the year 1902-1903 over the preceding year of nearly $300.00, assuming that the item of expenses of the latter half would be about the same as those of the first half of the year. How do you explain this difference General?

A. It cannot be stated in definite figures. It is an account which takes the odds and ends of profit and loss items of various kinds, and is constantly varying. It is not to be assumed; indeed it is a fact that some expenses incurred in the first six months of the current fiscal year which were not paid for, should be added to that statement to make a fair basis of comparison.

Q. Now General, will you examine the account and see whether there were any special items included in the year 1901-1902, that were not included in the subsequent statement of expenses that will explain this in part?

1285 A. I find nothing extraordinary or unusual in this account for the year 1901-1902, except an item of $125.00 paid A. H. Daily for injury to a mule, including loss of services, medical attention, &c., which serves to increase the expense account of that fiscal year to that extent, and is an extraordinary item. So far as the other items which have been paid from time to time are concerned, there is nothing unusual that I discover.

Q. Please state under what circumstances the mule was injured for which this man was paid?

A. My recollection is indistinct as to details, but I think it was due to its falling into a ditch, or other construction work of the company, and we thought it proper to pay that amount in settlement of any claim that might be brought against the company.

Q. General Wheeler will you give as many as four or five of the

larger items—I mean of the expense—for the last two years, for 1901-1902 and for the last six months of 1902, I mean outside of the regular routine, such as clerk's pay and that sort of thing?

A. The four largest items in the year 1901-1902 were $254.80 to Mr. Kimball, expenses of his trip and Mr. Cates to Boston and other points; $125.00 paid Mr. Daily as above stated; $218.27 paid William Wheeler for expenses of trip to Washington to arrange contract for water supply with the Southern Railway Company, and for expenses replacing tracings and plans for the Knoxville office. The fourth item was also to William Wheeler mainly for like expenses for renewal of plans for the Knoxville office, which plans are necessary of replacement from time to time as they are very frequently referred to and become dim by use. In the six months ending Sep-
1286 tember 30, 1902, there are no large items beyond the summation of such expenses on the weekly disbursement reports of the Superintendent, excepting two payments to Mr. Cates for legal expenses, one for $200.00 the other for $300.00.

Q. On what account was this $500.00 to Mr. Cates and charged to expense account of the last six months about which you have testified?

A. I do not know the details. He is authorized to draw on me for such items from time to time as he requires them.

Q. This was in addition to his regular salary?

A. Yes sir.

Q. His contract is to attend to the legal business of the company?

A. The ordinary legal business of the company is compensated by his annual salary but not extraordinary expenses.

Q. Well now can you state what this — for and whether it was "extraordinary" or not?

A. I cannot state what is was for in detail.

Q. Well on what account was the disbursement to Mr. Cates for the year 1901-1902 charged?

A. It was charged to expense, but I do not know the exact occasion for it.

Q. Was it for the expense of his trip to Boston?

A. I do not know sir.

Q. Well as to the $500.00, comprising two items of $200.00 and $300.00 paid to Mr. Cates for the last six months about which you have testified; was there any account rendered?

A. No sir.

Q. General Wheeler when was the statement as to the year
1287 1900-1901 which you have embodied in your deposition, made up?

A. A short time before this case was called for hearing.

Q. Before the beginning of the taking of depositions in this case?

A. I am not positive whether it was after Mr. Wm. Wheeler began to testify or shortly before. It was about that time when it was understood that I had to testify to matters within my supervision.

Q. Were not the statements upon which you and he testify made up at Boston some time during the summer or fall before as to that year?

A. I have testified as to the time my statements were made up. His, I think, were made up earlier, and yet they may not have been completed much earlier—probably were not.

Q. Were the statements for the year- 1901, 1902 and for the six months for April 1st. 1902 to Sept. 30th. 1902 made up at the same time or subsequently?

A. Subsequently.

Q. How about the statement of 1899-1900?

A. Still later, when it was decided that such statement should be given.

Q. Your Company resisted giving any statements as to the year 1901-1902 and as to the six months from April 1 to Sept. 30th, 1902, until the Court decided otherwise since the taking of evidence began in this case did it not?

A. The evidence will show.

Q. No it does not show.

Mr. CALDWELL: We object to that question.

COMMISSIONER: The exception is sustained.

Mr. PICKLE: The Plaintiff excepts to the ruling of the Master.

Q. Those statements were made up since the Court passed
1288 upon that question were they not, and since the taking of evidence in this case began?

A. I have stated to the best of my recollection when each one of them were made up.

Q. And you resisted giving any statement as to the year 1899-1900 didn't you?

Mr. CALDWELL: We object to the question.

COMMISSIONER: I sustain the exception.

Q. And also to prior years?

Mr. CALDWELL: We object to the question.

COMMISSIONER: Exception sustained.

Q. General Wheeler, this ordinance that you resisted was passed, as the bill alleges and as the fact is, March 30, 1901. How long prior to that date had the agitation been going on in regard to this water rate matter between your company and the city?

A. That is a matter that counsel for the city is better able to answer than I am. I do not know exactly.

Q. It had been going on for a year or more hadn't it?

A. Yes sir.

Q. This same ordinance except the word "annually" being left out, had been passed in the previous year 1900, hadn't it?

A. I am not posted as to its being the same.

Q. General Wheeler going to the statement which you have embodied in your deposition, or made an exhibit, I do not know which, denominated "Total Construction Account per Treasurer's book December 31, 1891 to March 31, 1902" the first item on that account is to December 31, 1891 $471,496.75. I will ask you to state in a general way the items which make up this sum?

1289 A. The items in detail are as follows:

Debenture Bonds, discounts to date	$7025.00
1st. Mortgage Bonds " "	4400.00
Capital stock, amount issued	250000.00
Betterments	193710.81
Legal expenses	1767.25
Real estate	11689.89
Personal injury	1000.00
Office furniture	350.71
Jackson Street extension	779.79
Patton Street "	49.57
W. 5th. Avenue "	363.74
F. Clinch St. "	204.85
Magnolia Ave. "	145.66
Crozier Street "	9.48
Total	$471496.75

Q. You have included in this original cost of construction the total issue of stock of the Company at its face value of $250,000.00 have you?

A. I have.

Q. You have likewise included discounts on the bonds of the Company?

A. Yes-sir.

Q. And the cost of all betterments as shown by the books?

A. Yes-sir which we infer from the books they cost.

Q. And the expense of additions made subsequently up to the date in question?

A. Yes-sir.

Q. The betterment account includes the following does it not?

Force main		$6,496.88
Tapping account		1,554.78
	Construction account	7,958.24
1290	Reservoir account	$30,300.38
	Street account	98,339.38
Pump Station account		45,208.57
Meter account		217.28
Deane Brothers pumps		850.00
National Meter Company's accounts		285.00
And		271.00

and various smaller items for labor, material &c?

A. It does, with balance of account carried to construction account amounting to $193,701.81 as stated.

Q. How much is on the credit side of this account?

A. $83.60.

Q. Now what does "Force main" account include; the construction of the original force main, cost material and labor, is that what you understand about it?

A. I suppose so.

Q. What about "Tapping" account; does that include the material, cost of tapping, labor, material &c.?

A. I so infer from the books.

Q. What does the item "Construction" account, $7958.24 include?

A. I am unable to determine from the books what character of accounts were carried into construction account as distinguished from other betterment accounts.

Q. Now "Reservoir" account, $30,300.38; that includes labor, material &c. for original construction and maintenance up to date of December 31, 1891, does it?

A. Apparently so from the books.

Q. What was the amount for labor and material expended on the Reservoir up to June 30, 1884?

A. I infer from the construction books, although without records to vouchers, that the labor account was $12,139.23, and the
1291 material account $11,189.97 making total of $23,329.20 as carried into that account in one item on page "43." Apparently there are other items of labor and material however in the same account, but of other dates previous and later.

Q. What amount of previous dates will you state that is not embraced in that sum?

A. $633.29 previous.

Q. Now this amount of $633.29 accrued between January and June 30, 1884, did it not?

A. Apparently.

Q. Well does the "street" account of $98,339.38 include labor and material for original construction of the plant, and up to what date as appears from the books?

A. It appears to include such account to and including July 18, 1890.

Q. The other extensions are entered on the account as of subsequent dates?

A. Yes sir to December 31, 1891.

The further taking of this deposition was adjourned until 1 o'clock P. M.

1 O'CLOCK P. M.

The further cross examination of the witness resumed.

Q. General Wheeler I will ask you whether the old books of this company were kept in such manner as to determine with any degree of certainty any specific result concerning the operation or construction of this company?

A. I have already testified that the books of the company which have come into my possession covering dates previous to December 31, 1891, contain entries presumably correct, but they are not supported by original vouchers; therefore in my testimony I
1292 have sought to qualify my answers in effect, by stating that I inferred "this" and "that" from such entries as made in the books referred to.

Q. General Wheeler, have you any book entries, correspondence or other means of determining what was paid per ton for the pipe that entered into the original construction of this company, if so, please produce the same?

A. I think we have nothing except what is to be found in the books which have been presented in this hearing, and as a rule, the prices are not set forth upon the books, but entries in the books refer to bills rendered, which bills have never come into my possession.

Q. Do the books at any place show the price of pipe that has gone into the construction of this plant?

A. I cannot say that they do not; I have not discovered where they do.

Q. I see that the construction account—the aggregate of it as rendered in your statement for the year 1900 is $165,840.83. Of what does this item consist?

A. The larger part of it is incident to the purchase of the Lonsdale Beaumont Water Company property.

Q. Have you the original books of the Lonsdale Beaumont Water Company?

A. If I remember correctly they were reported to us by the officers of that company as having been burned; in any event they were not turned over to us at the time of purchase.

Q. You have none of the books of that company?

A. No sir.

Q. You have a complete set of books, both of construction and additions and of operations since you came into control of the plant in 1891, have you?

A. Yes sir, since December 31, 1891.

Q. They are here at Knoxville, are they?

1293 A. Yes sir.

Q. I notice General Wheeler on the Journal entry for 1895-1896 charged to construction account "Franchise" $710.88 What does this charge mean; what does it include?

A. It includes extra legal services of the Company's Attorney.

Q. To whom was it paid?

A. $700.00 to C. T. Cates, Jr. and $10.88 is for sundry telegrams and expenses.

Q. What service was that paid for?

A. Extra legal services.

Q. In what courts or cases?

A. I am unable to say sir. I shall have to refer you to Mr. Cates.

Q. Your attorney was on a salary at that time was he not?

A. He was.

Q. Which was charged to salary account?

A. Yes sir.

Q. To what extent does this franchise item enter into your accounts, General Wheeler?

A. It is as follows:—

Franchise Account.

June 1, 1898.	Wheeler & Parks. Expenses at Nashville and Knoxville, a/c litigation, etc.....	$4,741.87
April 9, 1894.	Legal account.....	2,575.00
Feb. 28, 1895.	Wm. Wheeler. Services and Expenses various legal matters.....	178.11
M'ch 31st, 1895.	Legal account	3,092.75
Dec. 26, 1895.	C. T. Cates, Legal account.....	700.00
Feb. 10th, 1896.	Wm. Wheeler, telegrams from Feb'y to April 30th.....	10.88

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M'ch 23, 1897.	C. T. Cates, Extra services in 1895, (Paid with 50 shares of stock)	$5,000.00
Feb. 28, 1899.	Franchise account.....	1,385.00
Apr. 5, 1899.	Expense to Nashville to look after question of privilege taxes.....	25.25
Apr. 28, 1899.	International Trust Company.....	725.00
Oct. 24, 1899.	Eliott National Bank.....	3,015.00
Jan. 30, 1900.	International Trust Co.....	535.00
Apr. 5, 1900.	C. T. Cates, Expenses to Knoxville to look after sundries.....	26.75
M'ch 31, 1900.	Certified copy Consolidation Ordinance...	1.20

Q. General, I wish you would turn to your accounts for the year ending 1895, and state whether you bought a pumping engine that year, and the price paid by your company for it, and from whom bought?

A. We did not, except it were included in the contract with Wheeler & Parks.

Q. Did you buy some gravity filters for the Filter plant that year?

A. I think they were included in the Wheeler & Parks contract.

Q. You have no entries on your books showing the cost of this machinery, engine and filters?

A. We have not.

Q. Turn to your books for the year ending March 31, 1897 and state whether you purchased any gravity filters for that year?

A. We did.

Q. From whom?

A. September 19, from the Cumberland Manufacturing Company, 4 of them, $1200 each—$4800.00.

Q. What type of filters were they and give their description?

A. The account reads as follows:—"4—10½ ft. Warren
1295 Filters, with 14 sets new style teeth for old filters, $4800.00.

Q. Have you the bill?

A. I haven't it here sir. That is a correct copy of the bill.

Q. That was f. o. b. cars at Knoxville, wasn't it?

A. I do not know sir.

Q. How were those filters set; by whom?

A. I am unable to state. I think Mr. Kimball can answer that question.

Q. How was your new engine constructed in the year 1895-1896 by Wheeler & Parks under their contract, or by the Company itself?

A. By Wheeler & Parks.

Q. How was the intake tower constructed in the year 1901?

A. By the Company.

Q. Have you an itemized statement of the cost of the intake tower, including labor, materials and everything?

A. The books will show the character of every item entered on this account.

Q. All the items pertaining to intake tower are entered on your books under that head, are they not?

A. Yes sir.

Q. What is the aggregate cost of the intake tower as shown by your books?

A. $8,455.33 actual cash cost.

Q. Well were there any other costs except "Cash costs?"

A. I meant in making that statement to indicate that there was no allowance in that amount for engineering expenses or contractor's profit or interest on investment during construction. It is the actual cash outlay of the Company to that amount.

Q. Didn't that include any portion of your Superintendent's time?

1296 A. No sir, there was no special charge made for his services in that connection in this account.

Q. His whole services were charged to what account?

A. Salary account.

Q. Which comes under operating expenses?

A. Yes sir.

Q. Don't you think General Wheeler that some portion of his salary account ought to be assigned to this intake tower during the period of its construction?

A. It would be a matter of endless detail, if the principle were adopted of segregating his salary in the almost countless classes of work he performs during the year, and we have not thought it necessary to do so.

Q. And you have not done so in this instance?

A. No sir.

Q. Well the Supervising Engineer's salary was all charged during this period to salary account and operating expenses was it?

A. Yes sir.

Q. Don't you think it would be proper to assign a due proportion of his salary to construction account for the purposes of this work?

A. I think it might be proper to allow him something extra for doing the work incident to it, but the percentage allowance making up his salary is really considered, not so much in the nature of compensation for the Supervising Engineer, as for the purpose of paying the expenses of his office, as to a considerable extent the salary of the Treasurer pays the expenses of his office.

Q. Was any part of the Treasurer's salary assigned to this work, or was it charged to operating expenses?

A. It was all charged to salary account, sir.

Q. This work was done direct by the Company, was it not?

A. It was.

Q. No contractor intervened?

A. No sir.

1297 Q. From whom was the lumber purchased for use in this work?

A. If agreeable, I will refer you to Mr. Kimball for answer to that inquiry.

Q. Do you know who did the rock excavation?

A. I do not sir. If agreeable, I will refer you to Mr. Kimball for this answer also.

Q. General Wheeler you have stated that certain portions of the work was done direct by the company—work of construction I mean—for the years 1894, 1895, 1896 and 1897, and the remainder done by Wheeler & Parks under their contracts. Will you turn to the account showing the portions done by the company?

A. I am pleased to present the books showing such items and to explain that those items which were paid for through the local Superintendent, were for labor and materials, mostly labor incident to new construction constantly going on, while the other items contracted for through the Boston office are entered in detail upon the journal also presented, and settled for by me. Such items are substantially all the materials of one kind and another, properly chargeable to construction account.

Q. Were any extensions of the pipe lines made during these years by the company directly?

A. Yes sir.

Q. If so during what years?

A. During every year from the time I took charge of the books.

Q. What were the prices paid for pipe in the respective years that you have been speaking about with which these extensions were made?

A. In 1892-1893 we paid prices ranging from $24.75 to $25.00 per ton of 2,000 lbs. In 1893-1894 from $24.00 to $26.50; in

1298 1894-1895 we appear to have bought no pipe, the contract with Wheeler & Parks providing substantially for all extensions of street mains laid therewith, or else work performed by them outside of their contract was paid for in addition; in 1895 and 1896 the same remark may properly be made; in 1896-1897 we appear to have bought but one car load of pipe which was of 6 inch size, at $20.00 per ton; in 1897-1898 we bought about 40 tons of pipe at prices ranging from $16.00 to $19.60 per ton; in 1898-1899 prices ranged from $16.10 to $18.60; in 1899-1900 prices ranged from $22.60 to $32.60 per ton and there was an unusually large amount bought during that year; in the years 1900-1901 we paid from $22.60 to $27.75; and in the year 1901-1902 we paid from $22.40 to $25.60 and in the six months ending September 30, 1902 we paid from $25.60 to $30.00 per net ton.

Q. Well, now General, will you give a statement of the quantity and date of each purchase, and the price paid, and the size of those pipe for those years, and file the same as exhibit "4" to your deposition?

A. I herewith file the same as exhibit "# 4" to my deposition as requested.

Q. You have given the minimum and maximum prices paid in your answers?

A. Yes, sir.

Q. Now is the difference in prices owing to the fluctuation of the market during the year, or owing to a difference in the size of pipe?

A. It is due to both factors.

Q. Now this was the price of this pipe, at least in Knoxville was it f. o. b.?

A. Usually, and I presume it will be found that all of it was—that is delivered at the railroad station.

1299 Q. Do you know what price Wheeler & Parks paid for the piping that was laid in North Knoxville in 1891?

A. I do not.

Q. Do you know at what date it was bought?

A. I do not.

Q. From whom was the pipe bought you have spoken of?

A. From various parties, but more largely from the Chattanooga Company than any other.

Q. It was cast iron pipe?

A. Yes, sir, cast iron pipe coated.

Q. Did your company actually pay the prices you have stated, or was there any discount on it?

A. It paid the prices I have stated.

Q. Was there any discount on it?

A. I think not; it is not usual in that line of trade to give cash discounts. My tabulation will show the amount actually paid.

Q. Who made the purchases, Mr. Wheeler?

A. They were usually arranged by me.

Q. Have you the bills?

A. We have them, yes, sir.

Q. Is there any rebate allowed on this pipe which you purchased from the Chattanooga Foundry Company?

A. No, sir.

Q. General Wheeler, what meter do you use?

A. We have various kinds; that is, various makes and sizes. For domestic service we use mainly what is known as the A A Empire Meter, manufactured by the National Meter Company of New York.

Q. What are the prices paid by your company and what have been paid during the same years I have been inquiring about as to the pipes purchased, of the different sizes?

A. They are as shown in exhibit "5" already presented.

1300 Q. Now, General Wheeler, have you a separate account of purchase and improvements of office building?

A. We have.

Q. What I want to know is what amount you have expended on office building since its purchase?

A. $1,747.56; there may have been some small items added to that account and charged directly to construction account, but nothing material.

Q. Now, General Wheeler, passing to the interest account that you have referred to in your statement on page "8" at the bottom, you have an item of interest on bonds and floating debt, entire plant $30,070.57. Was the interest on your entire debt at that time at the rate of 6%—this refers to the year 1901-1902?

A. I cannot say, and I have no schedule to show the exact amount of interest or discount paid on notes payable from time to time, this rate being governed by market rates at the time renewals were made, but it was 6% upon first mortgage bonds and debenture certificates and 4½% on consolidated mortgage bonds outstanding.

Q. Was it not 6% on preferred stock also?

A. Yes, sir, but the interest paid on preferred stock is not included in that item which you have referred to.

Q. It was however paid by the company?

A. Yes, sir.

Q. The point I want to develop is, whether that interest item is computed upon a basis of 6% upon the outstanding indebtedness at that time?

A. The rates named upon each class of securities above referred to were the amounts actually paid.

Q. When were the Consolidated mortgage bonds, to-wit; $411,000.00 sold and began to draw interest at the rate of 4½%?

1301 A. The sale was consummated in May, 1901, and deliveries made from month to month thereafter until October 18th, on which date the $411,000.00 had been disposed of. They drew interest from February 1st, 1901, payable February 1st and August 1st of each year.

Q. How many of those bonds have been disposed of up to this date?

A. $411,000.00.

Q. Have none of the others been disposed of?

A. No, sir, that is, of the same issue..

Q. So that at present there is $411,000.00 of your bonded indebtedness that bears 4½ per cent. interest, payable semi-annually?

A. Yes, sir.

Q. All of the debentures have been lifted, have they not?

A. Yes, sir, and destroyed.

Q. Who holds that $411,000.00 of 4½ per cent. bonds; to whom do they belong in fact?

A. I have already stated that we sold the greater part of them to H. M. Payson & Company of Portland, Maine, and I suppose they have sold them to one and another of their customers, although as I have previously stated in my deposition, they informed me they still had $125,000 of them still unsold.

Q. Do you, or your brother William Wheeler own any of them?

A. I do not; I don't know whether my brother does or not; I don't think he does.

Q. General, have you any book entries showing to whom the $150,000.00 of bonds were sold, or the $85,000.00 of debentures?

A. No, sir.

1302 Q. On page "26" of your deposition in speaking of the capital stock, bond issues, &c., you say "they were devoted mainly to construction account." What do you mean there by qualifying your answer by the word "mainly?"

A. We assumed that their face value was applied to the cost of construction, excepting to the extent of the apparently accrued deficit in operation, viz: $21,324.48, and our assumption was that to this extent the face value of bonds and stock had been applied to deficit rather than construction account.

Q. If they were not so applied they should have been, shouldn't they, in the proper management of the business?

A. The company of course would have been obliged to provide for the deficit in some way; as no other way was apparent in which it might have been provided for, we made the assumption stated.

Q. What amount of preferred stock has been either redeemed or displaced by these 4½ per cent. consolidated mortgage bonds?

A. $19,100, or 191 shares.

Q. Who holds the balance of that preferred stock?

A. About 150 different stockholders.

Q. Are you a holder of any of it?

A. Yes, sir.

Q. How much?

Mr. CALDWELL: That is so clearly irrelevant that I except to the question.

COMMISSIONER: Exception sustained.

Q. I will ask you whether the President of this Company and the directors of this company do not own all, or practically all of the preferred stock that is now outstanding?

Mr. CALDWELL: I except to the question.

COMMISSIONER: I sustain the exception.

1303 Q. Now, I will ask you if this preferred stock is not subject to be called at any time and redeemed by the company at any time at its option?

A. It is, upon reasonable notice to the extent of $75,900, but the company has obligated itself during the life of the 4½ per cent. consolidated mortgage bonds to leave $200,000.00 of it outstanding.

Q. Well, isn't that $200,000.00 in the hands of the officers of this company?

Mr. CALDWELL: I object to the question.

COMMISSIONER: I sustain the exception.

Q. Now you state on pages "20" and "21" of your deposition that a certain amount, or some portion of this preferred stock had been redeemed from the sale of the First Mortgage Bonds on agreed

terms. I will ask you what you mean by "agreed terms" there and what were those terms?

A. I had in mind a privilege given all holders of preferred stock to offer it to the company for redemption should they desire to do so, and receive in lieu thereof the consolidated mortgage bonds, because they were stockholders, of having bonds on the basis of 5 per cent. for ten years in exchange for their stock at par.

Q. Well how were these particular shares of preferred stock redeemed—state fully?

A. They were redeemed on the basis I have just stated, any difference in account being settled in cash. For instance, a person holding ten (10) shares of preferred stock, had the privilege of receiving $1000.00 and accrued dividend for it; he might have a bond in lieu of it on the basis of 5 per cent. for ten years; such an exchange of securities would result in a small amount of cash being
1304 paid to the person who made the exchange.

Q. Well, how much cash on the thousand dollars?

A. Approximately forty dollars, I should say on the thousand.

Q. And that is the way your shares of preferred stock were redeemed?

A. Yes, sir.

Q. Five per cent. bonds running for ten years?

A. At a price which would net the holder of them 5% for ten years and 4½% thereafter.

Q. On page "21" of your deposition you say that the entire amount of notes payable, to wit; $231,500.00 appearing on statement of March 30, 1901, was paid. To whom were those notes due and paid?

A. The notes were in favor of numerous parties. I can state that none of them belonged to the officers of the Company. The most of them were to banks, and two or three to private investors.

Q. In your explanation of the Depreciation Fund account made on pages "16" and "17" of your deposition, you explain that there was not standing as against that account as much as $1000.00 on March 30, 1901, there being as you say less than that amount in bank at that time. Now I will ask you if it is not a fact that that is a date at the end of a quarter when there is less in bank at that time than at subsequent or other dates?

A. I think you misapprehend the meaning of my statement. My reference to the amount on hand being less than $1,000.00, refers to "cash balance" and not at all to depreciation fund.

Q. But the question there asked was whether there was
1305 any fund or cash balance on hand to cover that fund. Now I want to ask you if that is not a date at which the quarter ends and when there is less cash on hands than at almost any other date?

A. There is absolutely no connection between "cash balance" on any date and "depreciation fund" on the same date. My statement on page "17" was that "the cash balance on that date was less than $1,000.00"; whereas the depreciation fund, so called on that date, was the balance of that book account resulting from operations

of the plant from the beginning until that time. I have already stated, bearing upon this distinction, that the depreciation fund has always been kept invested in the physical plant substantially, whereas if there was any such cash balance on hand, it would probably be applied to extinction of floating debt, as far as it would go, except as was necessary for the conduct of the company's business.

Q. Does it not appear on exhibit "2" made a part of your deposition, purporting to be interest account of the old company, that divers amounts were paid as interest other than the amounts paid as interest on the bonded indebtedness?

A. I would so infer, yet it cannot be definitely so concluded, as the books are unsupported by explanatory details.

Q. General Wheeler, you have stated that your company had suffered reduction of revenue recently by a loss of one or more customers, notably the Knoxville Iron Company, by reason of the advent of the railroad company. Now I will ask you if it has not had large accessions to its service in the way of new services?

A. It has, but I wish to have it noted that the question to which I gave answer was distinctly "Does such a thing as a reduc-
1306 tion of income by reason of loss of services ever occur to the company," and my answer was in reply to that inquiry. It likewise has constant accessions.

Q. Is it not a fact that the railroad company that is about to displace the Knoxville Iron Company will be itself necessarily a large consumer of water?

A. We hope so. That remains to be seen. I am informed, but it is not yet a certainty, as they are apparently locating much of their property on the bank of the river, it is for the purpose of supplying themselves therefrom. I want to add that the statement thus made about the Knoxville Iron Company, as I have since learned, is not yet an actual fact, as the removal from its old locality has not been completed.

Q. Then do I understand it is still a customer of the Water Company?

A. To some extent.

Q. Well now, going to the subject of meter services, you have stated that upon a comparison of the revenues derived from about 900 of these with the revenues that were derived from them before they were metered, that you estimate the company has lost revenue on account of the installation of meters. Now I will ask you to state why you did not take the full numbers of meters, about 1,419 into consideration that have been installed in the last year and a half—I mean the last year and a half before September 30, 1902?

A. No such number of meters have been installed in that period. There were but 1,407 on the entire plant September 30th and there were less than 1,200 in the year and a half previous. No com-
parison could fairly be made which would even approxi-
1307 mately indicate the result of putting on meters except between the two quarters named, as I think must appear from my analysis of that comparison.

Q. At any rate some 200 or 300 of the meters put in during that period do not enter into your comparison?

A. That is true.

Q. Now you stated in the same connection that the meter had not been applied to any service that did not pay as much as the minimum meter rate before the installation of a meter. I will ask you if you are not mistaken about that General Wheeler?

A. I dont' think I made that statement without qualification. There were probably half a dozen, or approximately that number of stores, not dwelling houses, to which meters were applied where the fixture rates formerly charged amounted to less than the minimum meter rate, but the reason for metering this class of services was because of several of them permitting other people than those rightly entitled to it to use water therefrom. I think it is strictly true that no dwelling house was changed from fixture rate to meter rate with the result of necessarily increasing the annual charge.

Q. Well now you make these statements upon information obtained from the office here and not from personal knowledge, don't you?

A. Yes sir.

Q. Is it not a fact General Wheeler that the putting in of meters, assuming that you have lost as you say some $1,400.00 in revenue, or some few hundred dollars in revenue, has resulted in saving of expense to the company in that it does not have to pump that larger quantity of water.

A. I stated that my estimate of the loss from placing those 950 services on meter basis was figured to be equivalent to
1308 $1,466.32 per annum. Whether or not a corresponding decrease in operating expenses resulted from the installation of these meters cannot be positively stated. On general principles we expect that the use of meters will decrease the amount of water used by customers, but there is probably more expense in looking after services, reading meters &c., than obtains with services charged at fixture rates.

Q. Well General Wheeler if you lose on income and don't make it up in savings, the putting of the hydrant meters was an ill-advised measure, wasn't it?

A. Not necessarily. It almost inevitably defers the day when larger mains and larger pumping machinery and increased water supply may be necessary, and at the same time it improves the general character of the service for the city.

Q. That leads me to ask what is the capacity of your plant as to the size of a city it will supply?

A. I am unable to give you an opinion that would be deemed expert in that matter. That is outside of my department.

The further taking of this deposition was adjourned until 9:30 o'clock A. M. Friday morning December 19, 1902.

1309 9:30 O'CLOCK, FRIDAY MORNING, *December* 19, 1902.

The further cross-examination of the witness resumed.

Q. General Wheeler, you have handed me this morning a paper denominated "Franchise account" which is produced in answer to a former question propounded to you on this cross-examination. Is this franchise account kept on your books as a separate account, or is this statement made up from items gathered from an inspection of other accounts?

A. It is kept as a separate account during the period indicated by the account, but not before or since, and the account is a transcript of the entries in my books.

Q. On what book and at what page will this account be found, General?

A. Ledger, page "254."

Q. This account runs from June 1st, 1893 to March 31st 1900 and aggregates about $22,000.00, beginning with the item June 1st 1893 purporting to have been paid to Wheeler & Parks for expenses at Nashville and Knoxville, account litigation &c. $4741.87. What are the items that make up this account, General?

A. I have no itemized statement of it. I entered in this account all the record that my books showed of the matter.

Q. Is there no voucher in your possession showing what this lien is for?

A. Undoubtedly there is a voucher, but the copy furnished was taken from the books herewith presented, and is undoubtedly word for word a copy of the item on the voucher in full detail.

1310 Q. Was there a statement rendered of the particular items of service and expense?

A. No sir not beyond what is shown on the statement itself.

Q. Do you know what the litigation and other matters were by which this item was incurred?

A. I don't remember but I suppose the larger part of it was extra legal expenses paid our counsel by Wheeler & Parks, and by them charged to the company, but I don't recall and cannot state what circumstances may have caused settlement with our counsel to have been made by Wheeler & Parks instead of myself directly.

Q. To whom was this amount paid?

A. Wheeler & Parks.

Q. You had at that time regular counsel employed by the company on a salary hadn't you?

A. We had, but always with the understanding that such regular salary only covered ordinary legal advice and service for the benefit of the superintendent locally and for ourselves—extraordinary services were not considered to be covered by the annual retainer or salary.

Q. Did you have any litigation at Nashville at any time?

A. Not that I know of sir; I don't recall any.

Q. Your regularly retained counsel was employed to attend to all litigation you had at Knoxville, wasn't he?

A. He was employed to attend to it wherever it occurred.

Q. The next item "April 9, 1894, Legal Account $2575.00? To whom was this paid?

A. To Mr. Cates probably.

Q. This is in addition to his regular salary?

A. Yes sir.

1311 Q. Was there an itemized account rendered to you for the services?

A. No sir.

Q. On account of what services was this paid?

A. I do not know. We have never been in the habit of requiring counsel, either in this company or any other with which I have to do, to render itemized bills of account, assuming that attorneys of good and regular standing will render no accounts which are not proper, and I think this practice is usual; it certainly is so far as my observation has gone.

Q. You paid the account without knowing what it was for did you?

A. Yes sir in detail.

Q. You asked for no explanation?

A. No sir.

Q. How was it paid, by draft upon you from time to time?

A. I cannot say sir; probably in the single amount as the entry so indicates.

Q. The next item is "February 28, 1895" an item paid "Wm. Wheeler, Services and expenses various legal matters, $178.11." Can you furnish any itemized statement of this amount?

A. No sir nothing beyond what is indicated by the account itself.

Q. Was there any rendered to you?

A. No sir.

Q. Do you know what the services or expenses were?

A. I do not. We think we rightly have ground for concluding that no improper charges will be made.

Q. The next item is "March 31, 1895, Legal account, $3,092.75" to whom was that paid?

A. Probably to Mr. Cates.

Q. Was that in addition to his regular salary?

A. Yes sir.

1312 Q. Was any itemized statement of this account rendered to you?

A. There was not.

Q. Do you have any idea what the services were?

A. I have not.

Q. You made no inquiry but paid it without inquiry?

A. So far as I recollect I did.

Q. The next item is "December 26, 1895, C. T. Cates, Legal account, $700.00." Is the same true of this item as the last one inquired about?

A. It is.

Q. The next item "February 10, 1896, Wm. Wheeler, telegrams from Feb. to Apr. 30th, 10.88." Do you know what those telegrams were about?

A. I do not.

Q. The next item "March 23rd, 1897, C. T. Cates extra services in 1895, $5,000.00 (paid with 50 shares of stock)." Is this item explained in the same way as the preceding items paid to Mr. Cates?

A. It is, with the further notation made in the account that it was paid in 50 shares of the stock, that is common stock of the company. It was paid in common stock instead of cash.

Q. Has that stock been redeemed?

A. No sir.

Q. Was it guaranteed?

A. I do not know what you mean by "guaranteed." It was the usual and ordinary common stock of the company.

Q. The next item "February 28, 1899, Franchise account, $1,385.00." To whom was that paid?

A. Undoubtedly to Mr. Cates.

Q. Is that explained in the same way as the preceding items that were paid to Mr. Cates?

A. I think it is.

Q. The next item "April 5, 1899, Expense to Nashville to look after question of privilege taxes, $25.25." What question
1313 about privilege taxes had you at Nashville?

A. I cannot speak with positiveness, but I think I raised the question whether or not the Water Company having the right to do business in Knoxville by its charter could properly be assessed by the city for the privilege of doing business, but as stated, I have no definite recollection as to the immediate necessity for that expenditure.

Q. You had no litigation there about the matter did you?

A. No sir.

Q. The next item is "April 28, 1899, International Trust Co., $725.00." To whom was that paid?

A. That was probably a draft in favor of Mr. Cates.

Q. Is it explained in the same way as the other items paid to Mr. Cates?

A. It is.

Q. The next item is "October 24, 1899, Eliot National Bank, $3,015.00." To whom was that paid?

A. Probably a draft to Mr. Cates with the same explanation.

Q. The next item is "January 30, 1900, International Trust Co., $535.00." To whom was that paid?

A. Undoubtedly it was a draft in favor of Mr. Cates with the same explanation.

Q. The next item is "April 5, 1900, C. T. Cates, Expenses to Knoxville to look after sundries, $26.25." What was that about General?

A. I do not recollect sir.

Q. Mr. Cates lived at Knoxville didn't he?

A. He does, but the entry on the books reads thus and therefore the transcript was made; whether or not it is a clerical error I do not know.

Q. Now you have not given this "Franchise account" subse-

quently, except one small item, I mean subsequent to April
1314 5, 1900. I will ask you to continue it down to date September 30, 1902?

A. I have already testified that the account ceased with the item of March 31, 1900, which item was for certified copy of consolidation ordinance, $1.20.

Q. Have you not paid like charges since April 5, 1900, to Mr. Cates, although they have not been entered on franchise account?

A. None, except to what I have already testified.

Q. Are there not others due that you have not testified to?

A. Not to my knowledge.

Q. Going back to the accounts, the items of which I have gone over, how were these items distributed between the accounts of construction, expenses, &c.?

A. They were all charged to construction account.

Q. All of these items?

A. Yes sir.

Q. How were the items charged since April 5, 1900 that you have testified to of this same character?

A. I have not testified that the items since were of the same character. I have stated that the items of extra legal services paid Mr. Cates since that date already testified to, were charged to expense account.

Q. Have any of them been charged to construction account since that date?

A. No sir.

Q. Have you paid any attorney's fees besides those paid to your regular salaried attorney and to Mr. Cates for extraordinary services during the years you have testified about up to this time?

A. I have already testified to the payment of an item of $100.00, I think it was to J. C. Coombs, and I think we paid Webb &
1315 McClung for legal advice some years ago in one or more instances, but the exact details I cannot give. All such items were charged to expense account.

Q. When did you pay Webb & McClung and how much?

A. I am quite sure it was previous to the year 1899-1900. The only item that I remember definitely about was an amount of $250.00 for an opinion on some matter which I do not recollect now.

Q. Have you a voucher for that payment?

A. No sir.

Q. If you find any entry on your books showing payments to Webb & McClung I wish you would give copy of it?

A. The only entry on ledger account with Webb & McClung is one of bill dated March 23, 1899 reading as follows: "Opinion on the right of the Water Company against the city of Knoxville on account of 10th Ward plant $50.00."

Q. Was that taken from the same book you have taken these other accounts from?

A. Yes sir, but as I have stated I think I am correct in recalling item of $250.00 paid them at an earlier date for an opinion, exactly when I cannot say.

Q. Will not your books show the fact?

A. Doubtless it would be shown in expense account if we should take the time to search it out.

Q. General Wheeler do you not know that a large part of this franchise account was expended in endeavoring to get the city of Knoxville to release its bond limit of $150,000.00 made with your company?

A. I do not sir.

Q. Do you remember General Wheeler, or will your books show whether or not you had one George Brown in your pay as attorney at one time?

A. They will not so show and I have no knowledge that he was ever in our employ in any capacity.

Q. Wasn't he on a salary when he was one of the Board of
1316 Aldermen in Knoxville?

A. My last answer answers the question.

Q. Then there is nothing on your books that will show that he was ever in your employ?

A. No sir, and I repeat that I do not believe he ever was in our employ, never having been so informed. In fact I don't know any such individual and therefore do not know of what George Brown you refer to.

Q. I have reference to a lawyer by that name who was a member of the City Council at that time?

A. I have no knowledge of such a lawyer as he.

Q. General, in a former part of your examination you stated that the last six months' operation of your plant prior to September 30, 1902 showed $11,000.00 net profits or earnings, I do not remember which you put it, and subsequently you modified that and said that on account of such other matters which were to be taken into consideration, that the entire year would probably show something less than that amount, and you place it ultimately at about $10,000.00. What other matters had you in mind that would tend to reduce it?

A. I think my deposition shows my modified statement of estimate of basis of earnings to have been between $9,000.00 and $10,000.00, probably nearer $9,000.00 than $10,000.00, and such modified statement had in mind the fact that sundry bills chargeable to profit and loss account had not been rendered and paid—therefore were not entered into the accounts of September 30, besides which I stated that sundry interest accounts had not been made up and entered. In addition to these there have been, I think since September 30 advances made in compensation of one or two employés in the office.

It is such considerations as these which make any attempt at
1317 an accurate statement of income that will be found at the end of the current fiscal year inaccurate and possibly misleading.

Q. Do you anticipate that any item corresponding to the $500.00 that you paid Mr. Cates for legal services during those six months will recur in the latter part of the year?

A. We anticipate that much larger amounts than this will recur during the six months of the latter part of the year, particularly the litigation upon the ordinance now being litigated.

Q. But outside of the ordinance, do you know anything that has to be paid at the latter part of the year to Mr. Cates on account of such?

A. I do not know of any such.

Q. General, could you give a statement of the compensation that you have received for the respective years that you have been Treasurer of this company?

A. I can. It is as follows:

Compensation Paid Treasurer on Basis of Percentage of Gross Water Collections Before Reduction by Discounts and Rebates (Within and Without City Limits).

	E. W. 1½ %
Jan. 1, 1892–March 31, 1893	951.61
Apr. 1, 1893– " " 1894	825.68
" 1, 1894– " " 1895	828.47
" 1, 1895– " " 1896	931.88
" 1, 1896– " " 1897	916.97
" 1, 1897– " " 1898	932.77
" 1, 1898– " " 1899	985.91
" 1, 1899– " " 1900	1232.02
" 1, 1900– " " 1901	1396.96
" 1, 1901– " " 1902	1505.22
" 1, 1902–Sept. 30, "	789.43

Q. These were the amounts actually paid to you?

A. Yes sir, which amounts as I have previously stated include compensation paid for clerical assistance in my office.

1318 Q. Well is your office in Boston kept for the benefit of this company only?

A. No sir, for this and others.

Q. How many other companies?

A. Seven others.

Q. What is the nature of the combination between those companies General?

A. They are entirely distinct.

Q. Do you act as purchasing agent for all of them?

A. I do, to the extent that I do delegate power of purchase in some cases to the local superintendents, and also with the reservation in some special cases involving engineering in large matters of purchase may be left with the Supervising Engineer, as in the case of pumping machinery, &c.

Q. General Wheeler turn to page "25" of your deposition. I wish you would state how much of the item of $165,840.33 of the construction account for 1900 is on account of the Lonsdale-Beaumont Water plant and how much for construction by your company?

A. The purchase price of the Lonsdale-Beaumont Water Company stock and bonds aggregate $119,129.32 and this is the amount which the Knoxville Water Company assumed and paid; the arrangement for the purchase, which was made by me personally

provided when the company later bought it of me that it should assume all the obligations which I had incurred in making the purchase, and it did so.

Q. What did those obligations amount to?

A. Just what I have stated, with interest paid on the amounts paid by me—or loans negotiated by me—to make the purchase, until the time of the purchase of the company from me.

Q. That included all the property of the company inside
1319 and outside the city and the franchise of the company, did it not?

A. My purchase was of the entire capital stock and bonds of the Lonsdale-Beaumont Water Company, which presumably covered its property of every description. It is proper to add that the cost to the Knoxville Water Company in addition to the amount stated above was a special allowance made to Mr. Cates amounting to $7,000.00, $5,000.00 of which was first given him in a note of the company for that amount, which note the company paid at maturity, and the balance, $2,000.00 was paid in cash April 16, 1900, besides which the company allowed me as compensation for my services in that matter the sum of $4600.00 in cash, and all of these additional items are included in the construction account of the company.

Q. This $7,000.00 paid Mr. Cates and the amount paid to yourself are additional to the items you have given on franchise account, are they not?

A. They are.

Q. Are there any other items of like amount?

A. I think not sir.

Q. Was there any litigation over the consolidation of the purchase and consolidation of the Beaumont Water Company with the Knoxville Water Company?

A. No sir and it is not claimed that these allowances were incident to litigation, but were for special services rendered by Mr. Cates and myself, these services extending over a considerable period of time.

Q. What special service was rendered by the attorney named?

A. I cannot say sir in detail. He assisted me materially in the negotiations and to such an extent that the directors were willing to make him this special allowance.

Q. What papers were drafted by him, if any?
1320 A. I cannot now state sir.

Q. Were any other parties employed and paid to assist in that transaction?

A. No sir.

Q. These services were rendered before the City Council, were they not, in getting them to release the bond limit and consent to the consolidation of these companies?

A. Not as far as I was concerned; to what extent Mr. Cates may have appeared before the City Council I am unable to state.

Q. You had considerable trouble did you not in getting the City Council to consent to that?

A. I do not know. I cannot state in exact terms as to this. It

was a matter that was under discussion and examination for some little while before the consolidation ordinance was finally passed.

Q. When were the $2,000.00 paid?

A. April 16, 1900.

Q. When was the balance of $5,000.00 paid?

A. May 28, 1901.

Q. When was the Lonsdale-Beaumont consolidation effected?

A. When the transfer of its property by deed was executed, the exact date of that I hav'n't in mind.

Q. Who drafted the deed?

A. Mr. Cates I think.

Q. Do you know of any other paper he prepared with reference to the transaction?

A. I think there was a contract for the delivery of some of the bonds, which was prepared by Mr. Cates and for an extension of that contract. I do not recall whether this is all the paper he might have prepared, neither do I know to what extent he might have worked upon the ordinance which was passed by the Mayor
1321 and Aldermen authorizing the consolidation of the two companies; outside of these two papers nothing now occurs to me.

Q. Mr. Cates was your regular attorney on a salary of $1000.00?

A. He was on that salary, as I have stated for ordinary advice and counsel, but not for extraordinary services of this character.

Q. Have you a written contract?

A. No sir.

Q. You have had very little litigation in the courts outside of the litigation in regard to this ordinance since you came into the company, hav'n't you?

A. We think we have had our share at other times.

Q. Has not your litigation in the courts, excepting this present litigation over this ordinance been exceedingly small and limited?

A. I certainly would not so state it; on the contrary I think it has been considerable.

Q. Can you name as many as two or three cases you have had in the courts during that time?

A. We had a somewhat protracted litigation on what is known as the "Tenth Ward Hydrant case" and we have had sundry cases upon the reasonableness of rules.

Q. When did the Tenth ward case occur?

A. I cannot state the year; I have no memoranda here to indicate it. It is a matter of public record.

Q. Can you name one of the cases and when it occurred over the reasonableness of rules?

A. I recall one which we term the "Harbison case" but its date I am also unable to state definitely.

Q. Can you name others?

1322 A. I do not at this moment recall others sufficiently well to name them, but the extent to which it was necessary to consult counsel is far greater than may be measured or estimated by the number of actual cases heard in court. It is a matter of very frequent necessity to confer with counsel as to sundry matters.

Q. The salary is paid chiefly for advisory service, is it not?

A. It is paid for various kinds of services which I have named.

Q. Didn't a controversy grow up between you and some party subsequent in regard to the Beaumont Water Company on account of which you had to pay $30,000.00 more than you contended you should have paid?

A. No sir.

Q. The Lonsdale-Beaumont Water Company was a competing company with your company, wasn't it, from the time of its creation and during the time of its continuance in business?

A. It might have been regarded as a competitor when it was first built and operated but for all practical purposes competition, so far as the Knoxville Water Company was concerned, ceased a considerable time before the purchase was made.

Q. It continued during its existence to occupy territory, and did at the time of your purchase, occupy territory that your company wanted to supply with water and has ever since supplied with water from its existing plant?

A. Yes sir.

Q. The same is true of North Knoxville also, isn't it?

A. Not to my knowledge.

Mr. CALDWELL: The two questions and answers upon the point whether or not the Lonsdale-Beaumont Water Company was
1323 a competing Company with the Knoxville Water Company, the plaintiff objects to both questions and answers except in so far as they indicate the territory occupied by the two companies, and excepts to such questions and answers in so far as they are questions of law.

COMMISSIONER: I over-rule the exception.

Q. General Wheeler, has your method of keeping accounts of this company been uniform since you came into the control of it?

A. I have already stated that changes are made from time to time as the necessity or desirability thereof seem to require or justify.

Q. Well now will you indicate in a general way for the direction of an expert, the method in which your books were originally kept, and the changes in the method of keeping them that have been made from time to time?

A. I hardly think that I can make a statement that will be of material assistance to an expert, but will gladly personally explain the details of the system which have obtained from the beginning until now, and what further information is desired I think can be readily obtainable by an expert from the books themselves.

Q. Have you the original vouchers here in regard to the specific years you have testified upon which your books are made?

A. None except those since April 1, 1900, having been advised that they would not probably be required.

Q. Would it be possible to verify the books without the original vouchers?

A. The accounts in the Treasurer's book previous to April 1, 1900,

so far as they refer to journal entries, said journal entries are
1324 substantially entered in full detail, but items taken from the weekly statements of collections and disbursements by the Superintendent, we need to refer to his daily reports, as we have not of course, undertaken to enter such reports upon the Treasurer's books.

Q. The journal entreies are made from the reports, are they?

A. The journal entries of collections and sundry incidental disbursements are made from the weekly reports; the larger items will appear upon the Treasurer's books to show their character and amount.

Q. But they are all based upon the original vouchers that are in your possession at Boston?

A. Certainly.

Q. And to verify them, it would be necessary to have the vouchers?

A. It would, if you require verification by the vouchers, but the entries in the books are taken accurately from the entries on those vouchers.

Q. General Wheeler, you stated yesterday that there were certain services which had been metered, the income from which had been less before metering than since, but that there were only a few of them. Can you give the names of the parties who composed this class and the amounts in each case realized under meter, and the amount realized without the meter during the quarters named, and file the same as exhibit "#6" to your deposition?

A. I herewith file the same as exhibit "#6" to my deposition as requested.

The further taking of this deposition was adjourned until 2 o'clock P. M.

1325 FRIDAY AFTERNOON, 2 O'CLOCK P. M.

The further cross-examination of the witness resumed.

Q. Well now General Wheeler, you have presented a statement of meter purchases in answer to a question I asked you on yesterday. I will ask you if this statement embraces all the meters which you have used since you have been in control of this company?

A. It purports to be a statement of all we have purchased within the dates set forth on this statement which we mark as exhibit "#6."

Q. And as you understand it, includes all you have purchased during that time?

A. I so understand it.

Q. These are the prices f. o. b. cars of Knoxville, are they not?

A. No, sir, they are the prices free on board cars at the points of shipment from which they were purchased.

Q. Are you sure of that?

A. Yes sir, as a general statement; I do not recall that any of them have ever been bought delivered in Knoxville, and the heading of the exhibit states that connections and freight may have to be added.

Q. Do you know what the freight on meters were?

A. I do not know sir. The shipments were made mainly from Boston, New York and Brooklyn.

Q. What is the size meter that is used for domestic services?

A. It is what is noted on the list generally as ⅝ inch. It is sometimes called ½ inch; they are practically the same size.

1326 Q. On what services do you use the larger meters, generally.

A. Those using the larger quantity of water, the effort being to put upon each service such size as shall pass without undue velocity, the maximum amount of water which is ordinarily required.

Q. Up to some date these meters were put in at the expense of the consumer, were they not, and up to what date?

A. To a very limited extent they were put in at the expense of the customer—at his option—under the terms of the original contract with the city, and such privilege still remains to any customer, but to what extent this has been done, I cannot state in definite figures.

Q. Meter rents, wherever a meter is put in, whether at the expense of the customer or of the company, are required to be paid, whether the meter is used or not, are they not?

A. No meter rent is charged upon meters owned by the customer. Of course it would be manifestly improper to make such charge in such case, but meter rent is charged upon meters which the company puts in at its own expense.

Q. And alike, whether the customer wanted it put in or not?

A. Yes sir, if put in by the company.

Q. And alike whether he uses water or not?

Mr. CALDWELL: I object to the last two questions as irrelevant.
COMMISSIONER: Exception over-ruled.

A. If he does not use water and give notice to the company that he does not wish for water, the service is shut off and no charge made, either for water or minimum meter rental.

Q. Have you any printed regulations of that kind?

A. On page "8" of the Rules and Regulations, in the paragraph referring to applications for the introduction and use of
1327 water, it is provided how such use may be obtained and the closing sentence in that paragraph reads as follows: "At any time after the expiration of one year from date of application, the water will be turned off at the option of the owner upon notice left at the office of the company." This rule applies to the case propounded by counsel, as I understand it.

Q. Now General have you a record showing the number of meters that have been put in at the expense of consumers and the number that has been put in at the expense of the company?

A. I suppose Mr. Kimball's accounts will show that, but they do not appear in the Treasurer's account.

Mr. PICKLE: The defendant by counsel excepts to the action of the Master in refusing to permit inquiry on cross examination into the construction and operating expense accounts for any years prior to 1899, and declines to finally close the cross examination of this

witness until it is settled by action of the Court whether such inquiry is proper.

Mr. CALDWELL: The plaintiff by counsel, and not understanding that the Court has at any time excluded examination into the construction account for any year, hereby tenders the entire construction account of the company as a part of the testimony of this witness to the defendant for examination.

Mr. PICKLE: Thereupon counsel for defendant asked if he would open the operating expense account in like manner, and this was declined.

Mr. CALDWELL (To General Pickle): I beg pardon; I do not want records made for me by anybody. I am ready to submit that question to the Court.

1328 COMMISSIONER: It is a fact that he asked you for them, and you declined, Mr. Caldwell.

Mr. CALDWELL: Why yes, I have no objection to his going into the record for the reason that the Master has already permitted an examination into the operating expenses for a period which he considers sufficient for the purposes of this case.

COMMISSIONER: The defendant declines to examine the witness as to Construction account unless he be permitted to examine him in regard to the Operating expense account in the years excluded as above by the Master.

Mr. PICKLE: Counsel for defendant states that he declines on account of the fact that he is not permitted to go into the Operating Expense account and that it is only by comparison of the two accounts that any intelligent cross-examination can be made.

Redirect examination by Mr. CALDWELL:

Q. In order to make the matter perfectly clear, I recall your attention to a statement made by you in the early part of your cross-examination, that the account kept by you under the head of "Depreciation" includes net earnings. I wish to inquire more particularly whether or not you mean to indicate by that answer that any dividends or earnings of any kind have ever been paid by the company upon the common stock of the company?

A. No dividend has ever been paid upon the common
1329 stock of the company, or any portion thereof since I have had charge of the books, and I find nothing to indicate that any payment was made previously.

Q. Will you put into the record for the use of court and counsel a blank certificate of the stock of the company in use before 1891, and with the $250,000.00 stamped upon it in lieu of the $200,000.00 as shown on the original certificates. If you cannot get a blank certificate, will you put one of the cancelled ones in the record, marking the same as exhibit #7 to your deposition?

A. I herewith present the same marked exhibit #7 to my deposition as requested.

Q. In that connection, please state the earliest date at which $250,000.00 seems to have been stamped upon the certificates as appears upon the face of the Stock Book itself?

A. The first certificate that I find so stamped is #210, dated September 1st 1891, and such stamp appears upon each certificate to and including #226, dated September 17th, 1891.

Q. Who were the persons who signed the first certificates so stamped as President and Secretary?

A. "R. N. Hood, President, Edward T. Sanford, Secretary, and they appear to have signed all the certificates thus stamped.

Q. Are those gentlemen living?

A. Mr. E. T. Sanford is living, but General Hood is not.

Q. Do Construction items in the books of the company kept before 1891, as used by you in your tabulation of construction account, filed with this deposition, include any allowance of

1330 percentage of contractor's costs, risks, etc.?

A. They are not.

Q. You have shown certain totals taken from the old books, or made up from the old books of the Company in years before you became connected with it. I will ask you of what dates you found and made the entries of those amounts?

A. I cannot state the exact date, but apparently the last of the year 1891, as the new books started by me contained entries beginning Jan'y 1st. 1892?

Q. They were made then before this suit was begun?

A. They were made substantially at the time I have just stated, to wit; about Jan'y 1st, 1892.

Q. You have been asked on cross-examination as to the cost of certain filters purchased in 1896 and 1897—I do not remember what the cost was—but would the cost of those filters as it appears from your books indicate correctly the relative original cost of that part of the filter plant formerly constructed and installed?

A. I suppose so; I have no definite knowledge of the cost of the original 14 in number.

Q. Would it take into account anything of the element of the filter house and the alum apparatus, floor, sand, shaft- or engine for operating the shafting, and similar items?

A. The account, as I have stated, indicates that it included fourteen sets new style teeth for old filters. Beyond that, I am unable to state as to the other details which you mention, excepting that it is apparent that it does not include anything incident to the building.

Q. Does it include a proportional charge of any part of the engine and belting, or other items I have mentioned in the last question?

1331 A. Manifestly none.

Q. Does it include any apportionment of the cost of the tank, or wash, or clear water piping under the house?

A. No-sir.

Q. As I recall you have, in making your statement in regard to the effect of metering services, used some nine hundred and odd services, and there were certain other services that had been metered that you did not take into account for the purposes of that statement. Why were they not included?

A. Because the apparent purpose of the question was to determine

by actual observation and figures the effect upon revenue which resulted by placing meters upon the said 950 services which previously had been charged for at fixture rates.

Q. Were you unable to make the comparison with these omitted ones?

A. They had no bearing whatever upon the question stated, as substantially all of them had been in use for a longer or shorter period previously.

Q. You were asked in your Cross-examination if you knew personally to what kinds or classes of service meters should be attached, and I understood you to say you did not. I will ask you who gave the directions to the superintendent as to the classes of services to which meters should be attached?

A. I did.

Q. Referring now to your deposition on page 84 I note a material decrease in fuel account for the last year and a half compared with that of 1900-1901, although there has been a substantial increase in the number of services since 1900-1901. Can we conclude
1332 from this what will be the effect of like increase in the number of services upon fuel account hereafter?

A. We may not; while the annual consumption in tons of coal during the eighteen months ending Sept. 30th. 1902 has been less than 75% of that used in 1900-1901, we may not properly conclude that as services increase in number the annual fuel charge will continue to increase, or even remain stationary, for the reason that the decrease in coal consumption resulted from two causes which have had their full effect in changing the ratio between coal consumption and water service, namely, *first;* new pumping machinery put into service about Feb'y 1st. 1901 by which the coal required was suddenly reduced about one-third and *second;* the policy carried into effect in 1901 of metering sundry domestic services, which caused an immediate drop in the amount of water pumped. Future increase in services must therefore involve corresponding increase in fuel consumption, unless or until more efficient pumping machinery, or further extension of the meter system may produce their natural effect upon coal consumption.

Q. You have been asked on Cross-examination whether or not you kept separate books of account for the portions of the water Company's plant inside the City proper and outside the City proper. Is there any reason arising from the nature of your business or otherwise why you should keep such separate accounts?

A. No-sir I think of none.

Recross examination by Mr. PICKLE:

Mr. PICKLE: The defendant not waiving his exception at the close of his former cross-examination proceeds to re-cross-examine
1333 the witness as follows:

Q. General Wheeler, you state that the Construction account as found in the books of the old Company prior to Dec., 1891, shows no allowance for contractor's risks, etc. It does show a payment on personal injury don't it?

A. Yes, sir, $1000.00.

Q. What is meant by connections of meters, General Wheeler?

A. The couplings by which they are attached to the piping on each side of them.

Q. They come with the meter as a part of it?

A. Sometimes we buy them with connections, but recently we have usually bought them without and the statement of this latter practice applies to practically all of them for domestic use, which we have bought of the National Meter Company.

Q. Prior to what date were the connections bought as a part of the meters?

A. About April 1st, 1900.

Q. Do you know what the cost of connection is per meter, where they are not included in the meter?

A. The charge for connections which all of the Meter Companies, I think, make for connections of meters of the ⅝" size, is 50 cents, and where we don't buy them of the meter Companies, we have to purchase them elsewhere, but we buy elsewhere as a rule because we can usually thus obtain them a little cheapter. A set of connections is to be used on every service metered.

Q. Are they not included in the price of the meter?

A. I am unable to state definitely—they vary with the size, the manner of connecting the largest meters also differs from that of the smaller ones. Will need to refer you to the superintendent for accurate information as to this.

Q. You get a discount off of the price you named for connections do you not?

1334 A. If bought with the meters, the same discount applies as on meters.

Q. How is it when bought separately?

A. When bought separately they are usually bought for a net price.

Q. Do you know what that net price is you pay?

A. I do not, sir; it is variable with different supply houses as is the price of other plumbing supplies.

Q. How much does it vary as to price of meters of domestic size?

A. I am unable to state from my personal information; such supplies are usually ordered as needed by the superintendent.

Q. Well, General Wheeler, you have stated that an increase of services might necessitate an increase in the tonnage of fuel consumed over that shown by the last six months. It would likewise result in an increase, even in a larger proportion of the revenues of the Company wouldn't it?

A. That does not seem to be apparent from any comparisons I have made or presented.

Q. Doesn't increase of services mean an increase in revenues?

A. It does, but the previous question, as I understand it, refers to a comparative increase and not an absolute increase.

Q. Well, isn't it true that the larger number of services that a company has, the less cost per service for operating expenses?

A. I think I have already answered that in my previous examination.

Q. General Wheeler, did you divide the sum which you received for your services in effecting the Lonsdale Beaumont purchase with any other person?

A. I did not, sir.

Q. Now going back to the filters; I believe the filters that you spoke about in your re-examination were those set in 1896-
1335 1897?

A. Yes, sir.

Q. I will ask you whether or not the Company that sold you those filters and set them, and put them in operation before they were paid for?

A. I do not recollect whether they sent the material and erected them, or whether they sent it and the erection was done by us.

Q. They were not paid for until they were put in, tested and proved satisfactory?

A. They were not.

Q. Does not the item of $4800.00 on your books for the four filters include fourteen set new style teeth for old filters?

A. It does, and I so stated previously in my deposition.

Q. How much of that sum represents the cost of the filters?

A. I have no idea how it would be itemized as between filters and teeth.

Q. Have you anything on your books that would show?

A. No, sir, I think their purchase was arranged by the supervising engineer.

Q. General Wheeler, isn't it true generally of machinery, pumps, engines, filters, etc., that where they are put in they are not paid for until they are installed and prove satisfactory?

A. I think we might say that that is the common practice to have them show reasonably satisfactory before settlement is made for them.

Q. And isn't it true generally of such machinery that the company furnishes a man to superintend their installation and the beginning of the operations?

A. I think the question whether supervision by the manufacturer or the purchaser is determined largely by the ability of the
1336 purchaser or of those in his employ, is sufficient for the proper erection of the apparatus, and would say in this connection when we purchased the last Worthington Pumping engine, the Worthington Company or Henry R. Worthington quoted a price of $1700.00 for its erection, which we declined to accept, and we erected the same at our own expense, and by our own employés at a cost at less than one-half that amount, and with perfectly satisfactory results.

Q. When was that general?

A. In the year 1900-1901.

Q. Ordinarily though where the Company guarantees machinery, it furnishes a man to superintend its erection?

A. I think it depends entirely upon such circumstances as I have

named, and the disposition perhaps of the purchaser to attempt what might ordinarily be new work of which he wasn't perfectly familiar.

Q. Well the fact is as to the installation of important portions of this plant—I mean the machinery portion, that has been the case has it not, that the seller has guaranteed satisfaction and furnished a man to superintend the installation of the machinery?

A. I cannot say that that has been the practice. I know nothing of such details previous to the time of our acquirement or control of the property.

Q. I mean since you have been in control of the plant?

A. In some cases since we may have arranged with the manufacturer to do it, but I am not positively informed and do not now definitely recollect.

Q. Have you any account under the head of "Filter Plant showing the cost of separate items of buildings at that point?

A. No, sir, they were erected under a contract with Wheeler & Parks, that is in original construction.

1337 Q. Have you among your books and papers, plans, and specifications of any of the buildings erected by the old Company, or the present one?

A. There are none in my charge.

Q. Do you know whether there are any in the archives of the Company?

A. Possibly the supervising engineer may have them; I do not know.

And further deponent saith not.

The further taking of depositions was adjourned until Monday, January 19th, 1903.

1338 MONDAY MORNING, *January 10th*, 1903—9.30 o'clock a. m.

The further taking of depositions was resumed.

FRANK C. KIMBALL, next witness called on behalf of the Plaintiff, having been duly sworn testified as follows:

Examination by Mr. CALDWELL:

Q. Where is your home, Mr. Kimball?

A. My home at present is in Knoxville, Tennessee.

Q. How long have you lived in Knoxville, Tenn.?

A. For the last four years.

Q. Had you ever resided in Knoxville prior to that time?

A. Yes, sir, I have been here off and on since June, 1891.

Q. What is your occupation?

A. Superintendent of the Knoxville Water Company.

Q. Have you held that position for the last four years?

A. I have.

Q. When you were in Knoxville previously were you connected with the Knoxville Water Company in any capacity?

A. In an indirect way; in fact I might say directly.

Q. Have you had experience in the construction and management of Water Works Plants?

A. I have for the last seventeen years.

Q. I wish you would state in detail what work you have done in building water works, and your means of knowledge as to that kind of work and as to the proper conduct of the water works business?

A. I have been engaged since 1885 almost continuously in the construction and operation of water works, and during that
1339 time, as Constructing engineer, I have had charge in whole or in part of the building of works at Belfast, Maine, at Somorsworth and Exeter, New Hampshire, at Braintree and Cottage City, Mass., at Putnam, at Danielson, Stonington, Mystic and Portland, Connecticut, also at Paris and Winchester, Ky., and have reconstructed the plant here at Knoxville, Tenn. In addition to this work on construction I have had very largely to do with the operation and maintenance of these plants, as well as of perhaps a half dozen others in various parts of the country.

Q. Are you a civil Engineer?

A. I am.

Q. Is that a correct designation of the profession or should I call it hydraulic engineer in this case?

A. Civil and Hydraulic Engineer perhaps would be the correct designation.

Q. Have you given any attention to the study of water rates and the fair price to be paid for water service?

A. I have, yes, sir.

Q. Have you been called to testify as a witness in such matters?

A. Not as to rates, no, sir.

Q. Have you as to construction and similar questions?

A. I have, yes, sir.

Q. Do you think that you are fairly qualified to give testimony upon the question of reasonableness of water rates such as is involved in this case?

A. I think I am.

Q. From your studies and experience do you think that you are qualified to testify in regard to questions of construction of water works?

A. Yes, sir.

1340 Q. When did you first come to Knoxville, Mr. Kimball?

A. My first visit to Knoxville was in January 1891.

Q. Had you at that time any business connection with Mr. William Wheeler?

A. I was in the employ of the firm of Wheeler & Parks of which Mr. William Wheeler was a member.

Q. Were you at that time a stockholder in the Knoxville Water Company?

A. I was not.

Q. Are you a stockholder now?

A. I am not.

Q. For what purpose did you come to Knoxville in 1891?

A. Messrs. Wheeler & Parks, as I understood, had purchased

a controlling interest in the plant, and they sent me down here to look over the place and to get ready to do certain work which they expected to have done shortly, my province being when that work was undertaken to have local charge of it.

Q. What, speaking generally, was the extent of the Knoxville Water Company's plant, meaning thereby the houses, machinery, pipe-system, &c. in 1891 when you came to Knoxville?

A. The plant at that time consisted of a pumping station in substantially its present location on the bank of the river, and pumping machinery, consisting of two Davidson pumps with four boilers and the necessary auxiliary engines, and appurtenances, a fourteen inch force main running from there to the present reservoir, which reservoir was substantially the same as the one now on the hill, and about thirty miles of pipe. There were also at that time, as near as I can recollect, about 1800 services connected with the works.

Q. Did you examine the pump station and appurtenances?

1341 A. I did that year, yes sir.

Q. What was their general condition?

A. The general condition of the plant was fair. At that time the consumption in the City was such that the pumps were obliged to run nearly the entire twenty-four hours of the day, and the buildings, as well as the pumping machinery were hardly adequate to supply the apparent demand for water at that time. We found when we came here, to augment the supply of water, a pair of small pumps, approximating one million gallons a day in capacity I think which had been installed temporarily on the river bank to help out the main pumps and pumping directly into the force mains and into the distribution system. These were however, shortly done away with.

Q. State what improvements about the pumping station have been made since that time, without going into smaller details?

A. Since we first came to Knoxville in 1891, the pumping station has been enlarged, a new four million gallon vertical pump erected, two new boilers added in the place of the two old ones which had practically arrived at the end of their useful life, the boiler-house itself rebuilt entirely, the boilers rearranged for more efficient service, a coal shed, coal chute and pocket built where previously there had been no storage at all for coal, and a new twenty inch force main laid from the station to the hill. Later the Davidson pumps themselves—the original ones—were taken out, the old part of the station thoroughly over-hauled and in very large degree rebuilt, and a new six million gallon Worthington pump erected in the place of the old Davidson pumps, together with all necessary smaller engines and machinery which appertain to a pump-

1342 ing plant. In addition to this the boiler house was extended and a new pair of very much larger and higher power boilers erected in the place of the remaining two original boilers, which were taken out. In addition to this an induced draft apparatus was installed in place of the old smoke-stack which originally supplied draft to the boilers. An intake tower was built to enable the

company to take water from various levels of the river during freshet and other stages, and all connecting pipes, &c. to enable the plant to properly perform its work, were also installed.

Q. Why were these several successive improvements of the pump station made?

A. As before stated, the old Davidson pumps had very nearly reached their capacity in 1891, but owing to inspections and other work about the city the consumption was temporarily reduced to a point where we were enabled to make them do the necessary pumping until about 1894 or 1895 when it became necessary to put in this new vertical pump, which I speak of, and to accommodate that, as well as to improve the situation at the pumping station, the extension of the pump-house was built. Later, the vertical pump was found to be reaching, not its capacity, but the full capacity of the Davidson pumps, which were being held in reserve, and it was necessary then to further increase the pumping capacity, which was done by replacing the Davidson pumps with the new Worthington pumps, leaving the second or vertical pump as a reserve to meet the growing needs of the City for water service.

Q. In your opinion, were those several improvements reasonably necessary to enable the Water Co. to furnish proper service?

A. At times the City undoubtedly would have been without water had those additional pumps not have been installed.

1343 Q. As the several items of machinery were replaced, what was done with the old machinery?

A. The only machinery at the pumping station that has been replaced, has been the Davidson pumps. They were of a pattern which it was not possible to sell for future use as pumping machinery, being of a pattern of some twenty odd years ago, but they were disposed of to the best possible advantage by breaking them up, separating the various kinds of metal and disposed of in that way to local dealers principally.

Q. Have you personal knowledge of the several changes and conditions that you have referred to in your statement?

A. They were all built under my direct supervision.

Q. Did you build the houses and sheds at the pumping station as well as install the new machinery?

A. Everything that has been done there since 1891 has been done under my personal supervision.

Q. Have there been in your opinion any unnecessary or extravagant expenses for changes and additions at the pump station?

A. I do not know of any.

Q. Going now to the reservoir and to the several erections of the Knoxville Water Company on Reservoir Hill; state first please what was there when you became acquainted with the property in 1891?

A. In 1891 there was nothing on the hill pertaining to water supply except the reservoir, which was substantially as it now exists. In 1894, the filter plant with its housing, necessary connecting pipes, &c. was installed, together with the stand-pipe on

that hill, and the high service pumping machinery, all
1344 substantially as it now is, with the exception of an addition to the filters in 1897, I think—an addition to the settling basin of the filter plant in 1899; a second addition in 1901, and the raising of the stand-pipe about twenty feet which was accomplished last year.

Q. What are the dimensions and capacity of that stand-pipe at present?

A. That stand-pipe is thirty-two feet in diameter, about eighty-five feet in height, so far as the steel work and its storage capacity is concerned, and it holds about 515,000 gallons.

Q. What was the reason for erecting that stand-pipe?

A. The original reason for erecting it was to furnish high pressure to those portions of North Knoxville which the contract required to be maintained at that place.

Q. What was the reason for raising it?

A. It was raised to give somewhat additional pressure so as to more completely fulfill and carry out the contract between the town of West Knoxville and the Lonsdale-Beaumont Water Company, and more particularly perhaps to insure economy in operation, particularly in the pumping.

Q. What was the reason for establishing the filter plant?

A. The filter plant was established for the purpose of taking the mud, sediment, coloring &c. from the waters of the Tennessee river, which at times, particularly freshet stages was of a very dark brown color, and not at all satisfactory as drinking water, or even as a domestic, or other service outside of drinking, to citizens.

Q. Before that filter plant was put up, had there been any complaint as to the quality of the water?

A. There had been, yes sir.

Q. Did you mention the high service pumping machinery
1345 in enumerating the appointments on Reservoir Hill?

A. I mentioned that that was erected in 1894 at the time the filter plant and stand-pipe were built.

Q. Were these several additions made there on the hill after 1891 reasonably required in order that the company might render proper service to the public?

A. I think the necessity for the filter plant will hardly be questioned. The necessity for the high service pumping machinery and the stand-pipe was the outgrowth of the contract which the Knoxville Water Company then had assumed to carry out with the town of North Knoxville.

Q. Is there any part of the old city of Knoxville that had not fire protection from the hydrants themselves before that stand-pipe was erected?

A. All the hydrants that the city had ordered were protected to the full extent as required by the contract between the city and the Knoxville Water Company.

Q. How about that part of Knoxville on the summit and near the summit of Reservoir Hill?

A. There were no hydrants located by the city on what would be

called the summit of the hill, but those hydrants on the sides of the hill were supplied with all the pressure which the contract between the city and the Water Company called for.

Q. Before the stand-pipe was put up, was there any complaint of a deficiency of public water service on Reservoir Hill?

A. If there was I don't recall any at the present time.

Q. Was the pipe system as it existed in 1891 confined to the old city and exclusive of what are known in this record as West
1346 Knoxville and North Knoxville?

A. It was not. There were pipes laid at that time into West Knoxville—one and possibly two lines into North Nnoxville, and a line out in what was later known as the 10th Ward, which was east of the city.

Q. By "10th Ward" do you mean what is now the 10th Ward of the city of Knoxville?

A. No sir. It was territory which was a little later known as the Ex-10th Ward which lay east of the city; not the present 10th Ward, which is West Knoxville.

Q. Is the territory which you have described as the old 10th Ward in the city now?

A. No sir it is not.

Q. State generally what extensions of pipe lines have been made since 1891?

A. As before testified, in 1891 there was something like thirty miles of pipe, including those that I have just mentioned as being in North and West Knoxville and to the east of the city, while 1902 there was something like seventy-two miles of pipe, making an addition of about forty-two miles of pipe since that time. In 1891 the largest pipe that was in the city was 16 inch, while today it is twenty inch, and the average size of the pipes today is considerably larger than they were in 1891, various sizes from twenty inch down having been laid in all parts of the city, including North and West Knoxville and some in that territory known as the Ex-Tenth Ward.

Q. Can you state approximately what replacements of pipe laid before 1891 have been made since that date?

A. There have been taken up and replaced by pipes of larger size approximately 55,000 feet or very close to 10½ miles of pipe.
1347 Q. Why were those replacements made?

A. In some instances to provide for better circulation and better fire protection, and in others for the purpose of running main or trunk lines of pipe in, around and across the city, in doing which it was necessary to replace the smaller pipes in those streets—some mile or more of this pipe having been laid within the last three years on account of criticism of the City of a lack of fire protection and consequent volume of water.

Q. Have you found that the pipes deteriorate rapidly after they are placed under the ground? I mean here, and not generally speaking?

A. Speaking as regards Knoxville, deterioration of pipes have been very small from natural causes. Some pipes which we have taken up, where they have been unaffected by electrolysis being in

very good condition. We have, however, found pipes in a few places where electric current has evidently deteriorated them to some extent, but the general character of the pipes laid presumably when the works were first constructed have shown to be very good when they were taken up.

Q. Reverting to Reservoir Hill, were the additional construction after 1891 made under your supervision?

Q. All were except the installation of the four additional filters about 1897, which were not under my direct supervision.

Q. To what extent were the replacements and extensions of the pipe lines made under your supervision?

A. They were all made under my supervision except such as occurred between September 1895 and January 1899 with which I had no personal connection so far as Knoxville was concerned.

1348 Q. Who supervised the laying of pipe in that excepted period?

A. Presumably the then superintendent, Mr. Hague.

Q. Have you general knowledge as to the extent of pipe laid by Mr. Hague?

A. I have in this way; nearly all extensions which were laid then were laid under orders from our Boston office, most of which applications were referred to me and largely passed upon by me. When these extensions were made, a diagram and description of them were sent into the office and were examined, plotted on the plans and entered in the records by me and my observation since I have been down here since 1899 show that the records of those extensions are substantially correct.

Q. Have you maps or diagrams showing the entire pipe system now?

A. We have, yes sir.

Q. What does it show in regard to the size and location of the pipes?

A. It shows the exact size and location of all the pipes laid and connected with the works.

Q. When you came here in 1891 was there such a diagram in existence?

A. There was not.

Q. Were there any in the office, or did there come into your possession the necessary data for making such a diagram?

A. There was no information in the office to any extent as to either the sizes or the location of the pipes.

Q. By what method was the necessary information acquired?

A. Under my personal supervision we made what we called a "pick and shovel" survey of the entire town. We dug at all

1349 supposed intersection points of the pipe until we found the pipe, located it, measured the size of it and then followed along each street in succession until we came to the end of those pipes, digging test holes here and there until we had covered the whole city, and from these test holes located and measured all of the pipe.

Q. Are you satisfied that the diagrams as they now exist are correct as to size and location?

A. I am.

Q. To what extent was that pick and shovel survey made, under your personal supervision?

A. I personally saw anl located at least one-half of the pipe from the open holes after they were dug; the other half were located, temporarily while I was perhaps at another place, by the man in charge of that work under me—an assistant of mine.

Q. I omitted to ask you awhile ago about how much pipe was laid by Mr. Hague when you were not here?

A. There were about 17,000 feet, or 3¼ miles laid during this period.

Q. The pipe laid during that period is all shown in your system of diagram is it?

A. Yes sir.

Q. In your statement of the total of pipe lines now, do you include pipe originally pertaining to the Lonsdale-Beaumont property?

A. It includes all pipe which the Knoxville Water Company bought from the Lonsdale Company that now exists.

Q. Then as I understand your answer to the question as to the total amount of pipe now existing, that is not the total amount laid, but the part or the portion that remains after taking up the disused portions of the Lonsdale system?

1350 A. It is the net pipe now attached to and in use by the Knoxville Water Company at the date mentioned.

Q. In addition to the pipes of the Lonsdale-Beaumont system what other portions of the Lonsdale-Beaumont plant are you now using?

A. We are using the stand-pipe on Lonsdale Ridge.

Q. State why and for what purpose that stand-pipe is used?

A. To maintain the high pressure required under the contract with the former town of West Knoxville.

Q. How is that stand-pipe supplied with water?

A. It may be supplied with water in two ways, either by gravity from the stand-pipe on Reservoir Hill, or by pumping direct through a connecting main from the high service pumping station at the filter plant on Reservoir Hill.

Q. How is it usually supplied as a matter of fact?

A. At the present time by gravity from what we call the east stand-pipe.

Q. Does the stand-pipe perform any service to the system outside of the mere fact that it furnished high pressure?

A. It does, both from the fact of furnishing additional storage to be used in case of a temporary shut-down or break of the high service pump, and it also acts in effect to double the capacity of the connecting pipes, allowing a supply to be delivered into West Knoxville which lies between the two stand-pipes from both directions in case of a severe draft for fire or other purposes.

Q. In constructing and extending the system of the Knoxville

Water Company were there any topographical difficulties to be met and overcome?

1351 A. From a topographical point of view, it is never as easy nor as cheap to construct a water works plant in a City where there is as great difference in elevation as there is in Knoxville, as it requires either as we have here, two separate and distinct systems, one for the higher portions of the town and the other for the lower, or it requires a combined system calling for much greater elevation of the water, so that all the system is furnished under what might be called the high pressure, which would involve not only additional expense in construction on account of heavier weights of pipe and more especially designed machinery to pump against those great heads, but also increased cost in operation in pumping the water higher than it would have to be pumped if the town were more level. In operating two systems—a high service and a low service as we practically do here—it involves a construction in places of parallel lines of pipe to carry the high pressure across portions of the low pressure territory and thus increases quite largely the expense of construction, in addition to the cost of the high service pumping machinery and stand-pipe necessary to maintain this separate system, in either event adding very largely, not only to the cost of construction but to the cost of operation as well.

Q. Do you recall the elevation of Reservoir Hill above the river level at the pumping station?

A. High water line in our reservoir is 237 feet approximately above low water line in the river.

Q. Is the ground level betwen Reservoir Hill and the principal business portion of the City?

A. It is not, no sir—leaving the reservoir it is quite an abrupt descent into the valley of First Creek, so called, then an ascent

1352 to Gay street, the street you have in mind probably.

Q. How is it between Gay street and the town of West Knoxville?

A. It is the same condition reversed practically; leaving Gay street it is a descent to the valley of Second Creek, then an abrupt ascent to the highest point in West Knoxville—the site of old Fort Sanders.

Q. Do these variations of level make heavier pipe necessary?

A. Not particularly within the limits to which our pressure extends. In other words, we adopt a pipe of weight sufficient to withstand the highest pressures which we have on these lines, and make no difference on account of the lighter pressures, it being necessary to have a certain margin over and above what might be required on higher levels to withstand handling, cartage, &c.

Q. Does the character of the soil occasion any difficulty in the work?

A. The soil here is not as easy as in some places that I have had experience in laying water pipes. It is a hard clay necessitating picking throughout its entire length where rock is not encountered, and the percentage of rock here is larger than the average town outside perhaps of towns located right in the Granite hills. There is another difficulty which we have encountered a few times

in laying pipe different from what I have struck elsewhere, and that is the cavernous nature of the ground. There are two places that I recall, one on Clinch street near the Imperial Hotel and the other on Prince street between Main and Hill, where we have had to truss our pipe over caverns or caves in the ground to safely carry
1353 it without danger of its settling in these holes. In addition to this, I will state that we have frequently found leaks in our pipe where the water would, even to the extent of a 2 or 3 inch stream, pass away into the ground, presumably into some such openings as these, all of which makes it very difficult, not so much in construction as in maintenance to find these leaks and remedy the trouble.

Q. Do you know of any one else who is as familiar as you are with the details of construction and general condition of the plant of the Knoxville Water Company?

A. No sir I do not.

Q. Have you at any time joined with Mr. William Wheeler the President of the Knoxville Water Company in preparing a statement or analysis of the property of that company for the purpose of ascertaining its fair invested value?

A. Mr. William Wheeler and myself worked together over an analysis of that description last Summer and Fall, covering perhaps eight or ten weeks' time.

Q. Where was that work done?

A. It was done in Boston.

Q. In preparing that analysis, did you follow the books of the Company, or make an independent analysis?

A. The analysis was made independent of the books of account of the company.

Q. For what reason?

A. There were several reasons perhaps that caused it to be done; one was that the earlier part of the work,—that before 1891, we had no knowledge from the books what the plant did cost; between 1891 and the present time, a large part of the work also had been done under contract, which also rendered it necessary to go to other sources for the cost, beside which a book cost is not always conclu-
1354 sive of the proper cost of a plant from the fact that it frequently does not include services rendered which are charged to other accounts; does not include cost of tools in all respects, risks run and other matters of that kind, so that it was thought best to make it entirely independent of the book cost and based upon experience of costs of work of that description made, not only here, but in other places as well, taking into account of course the conditions which existed in this particular plant.

Q. Down to what date did you and Mr. Wheeler bring this analysis when you were at work at it in Boston?

A. At that time we brought it down to March 31, 1901.

Q. Have you since extended it to a later date?

A. It has since been extended, first to March 31st 1902 and then to September 30th of the same year.

Q. In working with Mr. Wheeler on that analysis, what part did

he perform, and what information did he furnish, and what part did you perform, and what information did you furnish?

A. It is rather hard to answer that question except in a general way—we were working together upon the matter. It is perhaps proper to say that the form and general character of the work was outlined by him; the quantities were principally furnished by me, while the unit prices were the result of conferences and agreement largely between us as they came up and the work progressed.

Q. What do you mean by "unit prices"?

A. The prices as for instance per foot of pipe and of various sizes laid, per thousand of brick laid and per yard of concrete &c.

1355 Q. Did you hear Mr. William Wheler's testimony in this case, or read his examination after it was taken?

A. No sir.

Q. With the permission of the court I will ask you to read those portions of Mr. William Wheeler's examination in chief, both when he first testified and when he was recalled, in which he sets out his analysis of the property, and states its fair invested value first down to March 31st 1901, then to March 31st 1902, and then to Setpember 30th 1902, and to state whether or not the results reached by you correspond with the results reached by Mr. William Wheeler, and whether the items entering into the analysis correspond with those upon which you base your conclusion. The portions being referred to are found as follows:

First. Beginning on page "21" of Mr. William Wheeler's examination in chief to page "115" and from page "129" to page "166-H."

Second. Beginning on page "479" and continuing to and including page "489."

Third. Beginning on page "498" to "508" inclusive.

Fourth. Pages "511" and "512."

Fifth. Beginning on page "535" to page "548" inclusive. Also Distribution pipes and Appurtenances outside the Corporate limits of the City as said City existed on March 31, 1901, being Exhibit — to the deposition of William Wheeler, furnished as shown on page "354" of said deposition.

It is agreed by counsel for both parties that the witness may answer the question in the way indicated and may read the designated portions of the testimony of William Wheeler.

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1356 The further taking of this deposition was adjourned until 2 o'clock p. m. January 19, 1903.

2 O'CLOCK P. M.

The further direct examination of the witness resumed.

Q. Beginning on page 21 of his deposition Mr. William Wheeler has given a summary of his classification and fair construction cost of the physical plant of the Knoxville Water Company to March 31st 1901,—not including administration services, legal services, litigation, charter and franchise charges, and expenses, nor the costs

and arrears expended and incurred in creating and building up the business—in creating the element known as "going concern." That classification extends over a part of page 22, includes 13 different items with subheads "A, B, C, D, E, F, G, G, H, I, under item "2," and under subheads "A, B, B, C, D, under item "9" the total of the amounts assigned to the several items being $711,379.51. Have you prepared a similar table to the one here referred to, if so how does it compare in items and in the aggregate with this one?

A. It is exactly the same.

Q. Do those items and that aggregate represent your judgment of the fair construction cost subject to the exceptions indicated of the several items and of all the items together?

A. It does.

Q. Does not this table and all the other tables and other facts embrace in Mr. William Wheeler's classification and analysis represent the joint work done by you and Mr. William Wheeler?

A. It does in all respects.

1357 Q. I find in the analysis by Mr. William Wheeler on page "25" of his deposition percentages allowed as follows, in addition to the construction cost as above set out: Engineering expenses, 6%, contractor's services, expenses, risks and profits, 12%, interest on capital during construction 3%, making in all 21%, but figured by Mr. William Wheeler for convenience at 20%. Did you adopt these same percentages for the several items I have just mentioned?

A. I think the total of 20% is full low for them. The item of 6% for engineering is fair, taking the entire works into consideration, although for some parts of it the engineering would amount to more than that. The item of 12%, contractor's services, expenses, risks and profits is lower somewhat than my experience would seem to warrant, as in fact I know it is the custom of contractors, some of whom have worked for us and others who have not, to charge or estimate for that item not less than 15%; and there is another element which should enter into this which is not included to its full extent in this analysis, and that is an element which could properly be added to this 12% of contractor's services, &c., for tools and the use of them, which amount to a considerable item in the construction of any work. The item of interest appears to me to be fair, being based upon the fact that the works are perhaps unproductive for at least six months after payments may have been made upon the same; so that in adopting the 20% a very conservative percentage I should say had been used which might easily have run from 3% to 5% higher.

Q. As I understand however you agree with Mr. Wheeler in the percentage for the purposes of this analysis?

A. Yes sir.

Q. And you think that the total percentage covering the

1358 different items to which reference has been made by Mr. Wheeler, is fair?

A. It is certainly conservative.

Q. On page "107" of William Wheeler's deposition I find the following after stating the initial construction cost at $711,379.51,

"there remains to be provided and accounted for, allowances for the following,—none of which are comprised above in the physical plant,—to-wit:—General administration services, and expenses not compensated in salaries or charged to operation, contingencies, legal services and expenses, litigation, charter and franchise charges and allowances, including the renewal thereof from time to time, and contracts, say 5%, and the time, costs and arrears expended and incurred in creating and building up the business,—in creating a "live and going plant," the elements of investment value known as "going concern" 15%. For these 20% is considered a fair and conservative allowance, which applied to the foregoing cost of the physical plant equals $142,275.90. Total costs of physical plant and property $853,655.41." Do you concur in the statements, percentages and results set out in this quotation from Mr. Wheeler's deposition?

A. I do, yes sir.

Q. Mr. Wheeler has calculated upon the basis set out in his analysis the amount to be charged on account of "depreciation" and has also referred to what he designates as "accrued depreciation." I will ask you first if you as an expert water works witness concur in the use that Mr. Wheeler has made of "Depreciation" in his analysis?

A. I cannot see how it could be otherwise used with justice to all parties.

1359 Q. Did you reach the same results that he has reached, and in that connection I call your attention especially to pages "166-H" of Mr. Wheeler's deposition, and ask you if said table represents your own conclusions upon the subject covered by it?

A. They do; this table as well as the material going to make it up having been compiled by Mr. Wheeler and myself the same as the rest of the analysis, and the conclusions reached were our joint conclusions.

Q. What is your estimate of the total invested value of this plant March 31, 1901, March 31, 1902 and September 30, 1902?

A. My estimate of the fair cost of this plant as of March 31, 1901 is $864,684.05.

Q. Does that represent the total invested value at that time?

A. Yes sir the total invested value at that time.

Q. Including all the percentages allowed by Mr. Wheeler?

A. Yes sir, including the percentages that have been mentioned, that is the 20%.

Q. Including depreciation also?

A. The depreciation being included in this analysis.

Q. Have you made any allowances which affect this aggregate sum by discounts, &c., necessary in marketing securities?

A. No sir I have not.

Q. Do you remember whether or not you went over that part of the work with Mr. William Wheeler?

A. I did, and figured it out in connection with him.

Q. But the cost of discounting securities is not included in that?

A. No sir, that being the physical value of the plant in-

1360 cluding the percentages mentioned but not including any percentage of allowance for marketing securities.

Q. Please examine pages "507" and "508" of Mr. William Wheeler's deposition and say whether or not you concur in the statements of that calculation and conclusion set out on said pages?

A. This represents the cost of the plant brought down to March 31, 1902 including the allowance of 10% for marketing securities, making the total cost $1,065,875.78 to that date, to which conclusion I fully concur. Also with the same allowance the construction cost brought down to September 30, 1902 makes a total of $1,105,533.69, which figure also I brought down in connection with Mr. Wheeler and arrived at this result.

Q. Then as I understand Mr. Kimball, it is your judgment that on the 30th day of September, 1902 the fair invested value of this property was as stated by Mr. Wheeler on page "508" of his deposition, to-wit: $1,105,533.69?

A. It is.

Q. And six months before that, March 31, 1902 it was $1,065,-875.78 as stated by Mr. Wheeler on page "507" of his deposition?

A. It was.

Q. As I understand you then your estimate as just stated for March 1902 and September 1902 includes all the percentages and other elements considered by Mr. Wheeler in making his analysis, whereas there is one or more excluded from your total of March 31, 1901?

A. Yes sir, the percentage for marketing securities was left out of my account for March 31, 1901.

Q. Do you consider the method adopted by you and Mr.
1361 William Wheeler in making this analysis and classification a proper and fair method?

A. I do, yes sir.

Q. At the time that this analysis was prepared did the Water Company have, or has it at the present time, entries and information upon its books of account from which such an analysis could have been made dating from the inauguration of the plant through the time covered by the analysis?

A. It had not to the best of my knowledge.

Q. Do you know of any other method that under the circumstances, was possible in making such an analysis?

A. No method is known to me except an estimate based upon such data as is here given.

Q. Suppose that there had been a full set of accounts and complete books showing as actual facts all the things covered by this analysis so far as construction cost is concerned would that book account have been of equal or greater value than the results reached by you and Mr. Wheeler as based upon your experience and observation—would it have represented in all cases fairly the present values?

A. I am hardly prepared to answer that question, as it would depend, I think, very largely upon how the books were kept—what charges were entered thereon as against construction—but I think it would be extremely difficult to show by any set of books, no matter how kept, the actual cost of a plant of this description.

Q. I do not refer to the actual cost but as to the actual present value?

A. As to actual present value, as that is something which might be changed by conditions as they exist today rather than as
1362 they existed when the works were built, it is fair to say I think, that no set of books could determine present value from costs as entered on the books at the time the work was done.

Q. Referring to the value of books of account in preparing an analysis of this character, do the Treasurer's books show the unit prices, as for instance the price of pipe per foot, pipe placed, number of brick used and brick placed and things of that kind?

A. No sir they do not, nor can they from the nature of the work.

Q. Is that an additional reason why the books would not be available for the purposes of such an analysis?

A. Most certainly; and in explanation of that, if you please, I will state as an example that all pipe and pipe supplies, gates, hydrants, lead, &c., when they are purchased are charged to an account called the "Supplies Account" and placed in stock. When an extension is made—a few hundred feet of pipe laid—the material is taken from stock and charged to that particular extension at as near cost prices as we can get at it, but those cost prices may vary somewhat, so that it is impossible for the books to show the direct unit prices for these particular pieces of work.

Q. Do you recall any part of, or statement in Mr. William Wheeler's analysis and classification from which you dissented, or do you agree with him in the whole of it?

A. I agree with him in the whole of it as it was an analysis which was made up and which we agreed to as we went along.

Q. Mr. Kimball who mainly furnished the unit prices adopted in that analysis?

A. I cannot say exactly. The method they *were* arrived
1363 at was mainly by agreement. In some instances as regard piping perhaps where I have had considerable experience in pipe laying, my figures were, I think, mainly adopted. In some other items, for instance such as pumping machinery in which Mr. William Wheeler has had a larger experience than I, his estimates were adopted, and so on through the list, although in all cases they were discussed and corrections of one's figures made as the discussion seemed to warrant. So that I think it is safe to say that they are the combined judgment of both of us as a whole.

Q. Are you familiar with the cost of cast iron pipe of various sizes since the year 1891?

A. I am.

Q. In assigning the cost to pipe for the different years covered by your joint analysis, how did you arrive at the price for each year, as the prices appear to vary considerably from year to year?

A. We took the average price which had been paid for pipe, not alone at Knoxville, but at other works with which we had had connection more or less, making due allowance of course where the other works were at a nearer or greater distance from the source of supply

for freight, and adopted an average price which was prevailing at that particular time?

Q. Have you been familiar with the cost of bricks, and of brick work of different kinds in the City of Knoxville since the time when Wheeler and Parks acquired a controlling interest in the Knoxville Water Company?

A. I have, yes sir.

Q. What method did you use in fixing prices to brick and brick work for the different years in the analysis?

A. The prices given in the analysis for brick work I think
1364 do not vary from year to year, but they do vary as to the kind and quality, both of the brick and of the mortar or cement in which they were laid. The way the quantity was arrived at was by taking the cubical contents of all the walls, finding out how many brick, by actual measurement were contained in a cubic foot, for instance which in our case averaged "17" and multiplying the cubical contents of the walls or structure by "17" to obtain the number of brick used. And in explanation I will say right here, that this is what is termed more particularly an engineer's way of measuring brick work rather than a contractor's way, it being the custom, not only in Knoxville but elsewhere that I have had experience with brick work to assume an arbitrary number of brick to the cubic foot, say "21," so that in the unit price that we have adopted, a comparison with a contractor's figures per thousand would show that the contractor's figures would be only about 17/21 as much as ours, and still be actually of the same value. In fixing a unit price for brick, we have therefore taken the actual number of brick used rather than a number which is exceeded by that percentage, we have estimated those at the going price of brick; we have taken the amount of cement or lime as the case may be that it takes to lay 1000 brick and applied to it the cost of that lime or cement; the same with the sand and also the labor required to lay 1000 brick, and the sum of all of these items make- up the amount which we have adopted as the unit price for brick of the various classes used.

Q. In regard to the contents of the cubic foot in a brick wall as I understand the contractor would be paid for "21" brick in
1365 a cubic foot while you would be paid for "17" brick only?

A. That is the idea exactly.

Q. Do you know it to be a custom in Knoxville to assign "21" brick to a cubic foot?

A. I do, yes sir.

Q. By what means did you become familiar with the prices of brick and brick work in Knoxville?

A. By having had occasion in the rebuilding of our plant to deal directly with brick-makers and brick-layers.

Q. Then are the statements in your joint analysis as to those items made upon your own personal knowledge?

A. They are, yes sir.

Q. What price have you assigned in your analysis to earth excavation?

A. I think different prices, but generally about 30 cents a cubic yard for earth excavation, refilling and grading which implies the handling of the earth twice—once out and once back—as in nearly all of our work it has to be so handled.

Q. It has to be rammed too, doesn't —?

A. Usually, yes sir.

Q. Upon what do you base these figures, upon personal knowledge, theory or what?

A. Principally upon disconnected items of work on which I have kept time employed, cost and other items that enter into the work, taking a fair average of the same, varying perhaps by the different conditions under which the work might be done.

Q. What do you mean by "disconnected items"?

A. Pieces of work taken at random and not covering perhaps all of the work we have done—occasionally a piece here and a
1366 piece there.

Q. Upon what do you base your estimate upon the cost of rock excavation?

A. In the same way as earth excavation, by knowing the time it takes to get out a piece of rock of a certain size, and the cost of powder, tools and other implements employed, and thus getting at the unit price in that way.

Q. In the analysis, you have assigned a certain amount of rock excavation to each mile of ditching; how did you arrive at that estimate?

A. In laying the pipe in North Knoxville in 1891 a careful account of all rock encountered was kept, and by dividing the number of cubic yards in North Knoxville by the number of feet of pipe laid, I found that there were actually 92/100 of a yard of rock excavated for each 100 lineal feet of pipe laid at that time. In 1894 and 1895 when the next largest amount of pipe was laid at one time, a similar account of rock was kept, which averaged 97/100 of a yard of rock for each 100 feet of pipe laid. So for convenience, adopting these as a fair average for the whole City, we assumed that one cubic yard of rock was excavated for each 100 feet of pipe laid over the entire city, and from my familiarity with the town, and with the various strata of rock therein, I think this is a fairly correct average.

Q. At what do you estimate the cost of replacing macadam on the streets after excavations for pipes?

A. We have estimated that at 6 cents per lineal foot based upon one-half the length of the cast iron mains, assuming that the rest of the pipe was laid in streets not requiring macadam—earth streets as it were, or dirt roads as they call them sometimes.

Q. My question was intended to ask the cost of replacing,
1367 over the whole of the city; it would have been the same amount per foot, would it not?

A. The same amount per foot, yes, sir, six cents.

Q. What width of ditches do you allow?

A. In pipes of 12 inches in size and under, we line out our ditches 2½ feet wide, which gives a ditch of sufficient size at the bottom for

a man to work in comfortably. Pipe larger than 12 inches up to 20 inches in size, we usually line out 3 feet wide, but these ditches as a rule break off on the edges so that by the time the work is finished they are about six inches wider than when we started at the top.

Q. How deep are the ditches ordinarily?

A. Our usual rule in Knoxville is to lay them three feet to the center of bore, but in no case with less than 2½ feet of cover. In a pipe 12 inches or larger in diameter, they would have to be laid enough deeper to allow this amount of covering.

Q. What is the cost per foot of replacing brick paving in the streets?

A. We estimate the cost of replacing brick paving, including the extra labor of taking up the brick where we have to lay a pipe line through a brick paving street at 60 cents a foot. This price is based upon the fact that the ditches are an average width of three feet, and where the old brick can be used again, we can replace that brick paving at $1.50 a square yard, which makes just about 50 cents a running foot, the extra 10 cents being used in taking up the bricks, cleaning them and digging through the six inches of concrete underlying the brick.

Q. State how this brick pavement in Knoxville is laid?

A. The brick pavement in Knoxville is laid upon a foundation of hydraulic cement concrete about six inches thick over which is a cushion of sand about an inch in depth on which the bricks are laid on edge and the joints grouted or filled with tar.

1368

Q. Is it difficult to take them up?

A. Not particularly after you get started, but you usually break the first half dozen brick—in fact have to drill them out to get a face on the brick work.

Q. What does it cost to furnish and set a fire hydrant?

A. That depends somewhat on the size, the number of nozzles, &c., on the hydrant, but taking the average as used here in Knoxville, the hydrants themselves costs, delivered here about $32.00 apiece. That is the average of the sizes which we have used for the last ten years, and an additional cost of about $5.00 each for setting, making $37.00 as about the average cost of setting the hydrants.

Q. To what extent, speaking generally, are pipe valves used?

A. They are used as a rule, I think it is safe to say, in every other block along a pipe line and at an important street intersection; where two mains, especially of large size cross each other, there would be and is in this town, in nearly all cases, four valves, one each side of the crossing.

Q. What does it cost to furnish and set a pipe valve on an average?

A. That depends upon the size of the valve.

Q. Upon an average is all I want?

A. It would be pretty hard to strike an average. I can give you the prices for each size perhaps.

Q. Well what does a twenty-inch valve cost to furnish and set it?

A. About $130.00, that is for the valve and setting, to
1369 which has to be added the price of the box or chamber over it.

Q. Describe a valve to the court?

A. A valve in a water pipe is simply a gate for the purpose of shutting off the water from flowing in any direction; in other words it is a gate which completely closes the pipe. They cost from $130.00 for a twenty inch pipe down to $6.50 for a three inch.

Q. Do you use them varying in size from twenty inch to three inch?

A. We do and even smaller where there are smaller sized pipes.

Q. Look at pages "540" and "541" of Mr. William Wheeler's deposition where the prices of valves are set out, and state whether or not they are correctly given?

A. They are, yes, sir.

Q. These prices are taken from the books of the company?

A. They are not taken from the books of the company but they are the prices which I know these valves in these various years have been bought for plus freight and drayage.

Q. What do you mean by a valve box Mr. Kimball?

A. It is a box which is placed over the stem of the gate with a cover to allow the gate wrench to be inserted in order to operate the gate.

Q. Are those valve boxes at a fixed price, or do they vary?

A. They are at a fixed price I think in our analysis, $3.00 each.

Q. What is a check valve?

A. A check valve is simply a straight-way pipe with an inclined valve resting when it is closed upon a seat, whereby if the
1370 flow of water goes in one direction it opens that valve, while if in the opposite direction it closes it automatically and prevents a back-flow of water.

Q. What sizes of check valves have you in use?

A. We have nearly all sizes, from twenty inch down to one-half inch.

Q. What is the cost of say a sixteen inch check valve?

A. A sixteen inch check valve is worth $185.00 laid down in Knoxville.

Q. And the prices I assume will vary according to size?

A. Vary according to size as do the gate valves.

Q. What is the term—what is meant by the term stop-cock in your business?

A. The term stop-cock is used for the appliance in small wrought iron pipes which takes the place of a gate valve in the larger pipes; in other words it is a gate, but of a different construction on account of its size.

Q. You use that then only in small pipes?

A. Yes, sir, in small pipes up to two inches in size.

Q. What do the larger kind cost?

A. A two inch stop-cock is worth about $3.00 and they vary in price from that down to 55 cents for a half inch.

Q. What do you mean by the term "service pipe?"

A. The term "service pipe" is applied to the small pipe which runs from a street main into the premises of the taker.

Q. Who furnishes those now?

A. Service pipes are laid at the present time by the Water Company for which in the ¾ inch size a charge of $5.00 is made to the consumer.

Q. What sizes of meters do you use?

A. From ⅝ inch up to 6 inch.

1371 Q. What does a ⅝ inch meter cost?

A. The meter itself costs $10.00.

Q. What is it placed in?

A. It is placed in an oak box, treated with tar for preservation and covered with a cast iron frame and cover.

Q. What does the connection of the meter cost usually?

A. Usually about 30 to 50 cents each set, for the ⅝ inch size—and proportionately more for the larger ones.

Q. Please look at table on page "542" of Mr. Wheeler's deposition "meter boxes and connections" and state whether or not that table is correct?

A. That table is correct sir.

Q. Returning to the subject of service pipes for a moment, you say you charge $5.00. Does that represent the actual cost, or is that your charge for it?

A. That is our charge for it. The average cost of our service pipes as near as we are able to get at it, is about $8.00.

Q. Has it been the custom of the Water Company from the first to make this $5.00 charge to the customer; if not state what the custom has been?

A. Until April 1, 1895, it was the custom to charge the consumer the entire cost of the service pipes. From that date until April 1, 1900, a flat rate of $5.00 was charged for the ordinary domestic size service, the remainder of the expense being met by the company. From April 1, 1900, to July 1, 1901, service pipes were put in free of all expense to the consumer, while from July 1, 1901; to the present time the consumer has paid $5.00 for the taps or services, the company standing the balance of the expense.

1372 Q. From what source did you get the information appearing in the joint analysis of yourself and Mr. William Wheeler as to the percentages of property inside and outside the city proper?

A. The property of the company outside of the city was obtained from the records and maps made either by myself or under my supervision and separated from the rest of the property and the percentage found by applying this quantity as found outside the city to the whole. They are my actual measurements and determinations.

Q. Did you furnish General Elbert Wheeler any statements or tabulations from your office for use in his deposition?

A. I did, several.

Q. Did you furnish the following: "Tabulated statement of earnings and expenses April 1, 1900, to March 31, 1901, found on page two of General Wheeler's deposition; difference between gross in-

come for the entire plant for the year ending March 31, 1901, under the Water Company's regulations and the city's ordinance on page "4;" a statement of operating expenses from April 1, 1900, to March 31, 1901, showing expenses of the entire plant and the city proper in separate columns on page "5" of his deposition; statement of earnings and expenses April 1, 1901, to March 31, 1902, and expenses in the same period for the entire plant in the city on page "8" of his deposition; earnings and expenses April 1, 1902, to September 30, 1902, &c., covering all of page "11" of General Wheeler's deposition except the first line; tabulated statement of taxes, being the last four lines on page "12" and first three lines on page "13" of his deposition?"

The further taking of this deposition was adjourned until 9:30 o'clock A. M., Tuesday Morning, January 20, 1903.

1373 TUESDAY MORNING, *January* 20, 1903—9:30 o'clock a. m.

The further direct examination of the witness resumed.

A. In answer to the last question propounded yesterday afternoon, I will state that General Wheeler drew off from his books, and I compared with him from the books in our local office, the actual water collections as shown on the statement from April 1, 1900 to March 31, 1901, from April 1, 1901 to March 31, 1902 and from April 1, 1902 to September 30, 1902. The annual income on basis of city ordinance rates he established by a percentage which was furnished by me and made up in our local office under my direction. The collections in the city proper for the same three periods were furnished him by me as drawn off from the books in the local office. Regarding the expenses, these were taken entirely from his books, no books in the local office showing the full expense account, but the distribution of the expenses as between the entire plant and the city proper were made by him with my assistance as to the divisions of the same. The list of taxes shown on pages 12 and 13 of General Wheeler's deposition I think was furnished him by me and compared with his books, but I cannot state positively as to that.

Q. Do you recall any other tables or tabulated statements that you furnished General Wheeler that I have not called to your attention in the last question or that you prepared in collaboration with him?

A. I furnished him a statement of the fuel account for the year April 1, 1900 to March 31, 1901.

Q. I refer to the completed statement and not to any items in the tabulated statement which you furnished him?

1374 A. I don't think I did.

Q. Mr. Kimball, at the time when the City Council of Knoxville was agitating the question of passing these ordinances regulating the rates of the Knoxville Water Company, it is alleged in the bill that certain efforts were made by the City Council through its Committee and possibly otherwise to obtain information from your company as a basis for said ordinances. I wish you would state

just what inquiries were made of the company in so far as you know?

A. The only inquiry that was made of me by any one connected with the City Government was in the form of a letter, I think in July 1900, signed by Mr. Birdsong as Chairman of the Water Committee, asking for certain information in relation to the company's affairs, and this letter I acknowledged the receipt of to him and sent the original to our Treasurer at Boston for reply. Other than this, I have no recollection of any questions being asked me by any one in connection with this matter.

Q. Is that the letter of which the original or a copy is exhibited with the answer in this cause?

A. I think it is, yes sir.

Q. If you have any other original correspondence from any officer of the City in regard to this matter in your possession, I will ask you to file it, or make it a part of your testimony in this case?

A. I have no original of any document sent to me by any officer or official of the city. I have however a copy of the letter of Mr. Birdsong directed to the Knoxville Water Company, Frank C. Kimball, Superintendent, under date of July 17th 1900, which is a copy of the letter referred to in my previous answer; also a copy
1375 of my reply to Mr. Birdsong of the same date acknowledging receipt of said communication. A copy of Mr. Birdsong's letter is found on page "289" of the "E. W. & W. W. Letter Book, No. 2" of the Knoxville Water Company's files. Mr. Birdsong's letter is in the following language:

"KNOXVILLE, TENN., *July* 17, 1900.

Messrs. Knoxville Water Company, Frank C. Kimball, Sup't, Knoxville, Tennessee.

DEAR SIRS: An ordinance relating to your rates for the furnishing of water to the citizens of Knoxville has passed two readings in the City Council and has been referred to the Water Committee for investigation and report prior to its passage upon its final reading.

In order that the City Council may have full information upon which to act in their effort to fix a rate that is reasonable for water, I respectfully request that you send me the following statement:

First. The amount of its bonded debt and the interest thereon?

Second. Its gross income?

Third. Its operating expenses, including all salaries.

Fourth. The valuation it fixes upon its plant?

Fifth. The original cost to the present owners, Messrs. Wheeler & Parks?

Sixth. The kinds of improvement and the cost of the same since Messrs. Wheeler & Parks have been the owners?

This request for information is not based upon any improper motive or desire to pry into or meddle with the financial
1376 affairs of your company, but in order that the City Council may have as full information as possible in passing upon the

question as to what is a reasonable rate to be fixed for the furnishing of water by your company in this city.

An immediate reply will be greatly appreciated.

A. S. BIRDSONG,
Chairman Water Committee."

My answer was as follows; (contained in General Letter Book #4 of the Knoxville Water Company, page 352.)

"KNOXVILLE, TENNESSEE, *July* 17, 1900.

Mr. A. S. Birdsong, Chairman Water Committee, Board Mayor & Aldermen, City of Knoxville, Tenn.

DEAR SIR: Your favor of even date duly received, and in reply thereto I desire to state that the information you ask for is in the possession only of our Treasurer, General Elbert Wheeler of #14 Beacon Street, Boston, Mass., who alone can give you the information desired, and I have therefore referred your communication to him for reply.

Respectfully yours,

KNOXVILLE WATER COMPANY.
FRANK C. KIMBALL, *Supt.*

Q. Did you receive any other letters from Mr. Birdsong or any other City official in regard to this matter?

A. No sir.

Q. Did you address any other letters to any other City official in regard to it?

A. Not to my recollection.

1377 Q. Were any personal requests made by Mr. Birdsong or any other city official to you on this point?

A. With this exception, Mr. Birdsong never spoke to me about Water works matters except once when he, accompanied by the Mayor, Mr. McTeer, came into the office to ask a single question about, I think, a meter placed on a particular service, but it had nothing to do with this case. With this exception, no other talk or communication has ever passed between Mr. Birdsong and myself, except at a conference at Mr. Cates' office at one time with the Water Committee relating to a possible compromise of this question, and that was after the ordinance was passed and in litigation.

Q. Before the passage of the ordinance was any request made to you by any officer of the city for an opportunity to examine the books of the company?

A. None whatever.

Q. Do you remember how long after the receipt of Mr. Birdsong's letter which you forwarded to General Wheeler it was until the first ordinance regulating rates was passed by the City Council?

A. I cannot exactly recall the date of the passage of that ordinance, but I think it was in the September or October following.

Q. If you have any way to refresh your recollection in the ab-

sence of the pleadings in this cause which show the date, please state?

A. I find in a letter dated August 20th 1900 written to our Treasurer, the following: "The Water Rates Regulating Ordinance was passed by the City Council and approved by the Mayor July 27th last."

1378 Q. This correspondence that you have given the stenographer was in reference to the ordinance passed at the date you have last named?

A. Yes sir.

Q. When the same or a similar ordinance was up for passage on two different occasions after that date, was there any correspondence between you and the City officials in regard to it?

A. There was none.

Q. Were any personal inquiries made by the City Council, or City officials of you in regard to it?

A. No sir.

Q. Had there been any correspondence between you and the City officials or inquiries made of you by City officials in regard to the Rate ordinance prior to the 17th of July 1900, the date of Mr. Birdsong's letter to General Wheeler?

A. No sir.

Q. So that the first inquiry was made ten days before the passage of the ordinance?

A. That appears to be the fact in the matter.

Q. If the information called for in Mr. Birdsong's letter had been proper, or the Water Company had been willing to give it, would there have been time to transmit Mr. Birdsong's letter to Boston to have the information prepared and the answer returned to Knoxville before the passage of the ordinance on the 27th of July?

A. There would not have been, and especially under the Sixth paragraph in his inquiry, where he asks for the kinds of improvements and the cost of the same, which could not by any possible means, have been prepared in that time.

1379 Q. Do you personally know whether or not General Wheeler answered Mr. Birdsong's letter of July 17th, 1900?

A. I have seen a copy of his reply.

Q. Did you see the original?

A. I will state that I saw the original communication of the Treasurer in reply to Mr. Birdsong's letter of July 17th before it was delivered to him, which was on either the 22nd or 23rd of July.

Q. Have you a copy of General Wheeler's reply?

A. I have not.

Q. If a copy or the original is not found to be exhibited with the pleadings in this cause when they are recovered, being now mislaid, will you exhibit a copy of General Wheeler's answer as exhibit "1" to your deposition?

A. I will.

Cross-examination by G. W. PICKLE:

Q. Mr. Kimball, how long have you been in the employment of Mr. William Wheeler in connection with the Water Works business?

A. Since 1885.

Q. You have served him at various places and in various capacities during that time in his water works enterprises have you?

A. Yes sir.

Q. Have you heretofore been a witness in any of his litigations over his water works?

A. None of his, no sir.

Q. How often have you testified in Water Works cases?

A. Once I think.

Q. What case was that?

A. In the purchase of the Water Works, a privately
1380 owned plant in the City of Somersworth, New Hampshire, by the City.

Q. Have you been frequently engaged with Mr. Wheeler in consultation and preparation for his giving testimony in such cases?

A. I have more or less, yes sir.

Q. You and he have always agreed in your conclusions, hav'n't you?

A. Substantially.

Q. You first came in touch with the Knoxville Water Company, or the Water plant, in 1891, I believe you state?

A. Yes sir.

Q. In what capacity were you serving Mr. Wheeler, or Wheeler and Parks at that time?

A. I was in their employ as a Constructing Engineer.

Q. You had personal local charge of the construction of the North Knoxville Water Plant, and of such portions of the Knoxville Water Plant proper as were constructed or reconstructed in 1891?

A. I did.

Q. What, in a general way, were your duties in the execution of that work, Mr. Kimball?

A. To see that the work was properly constructed, to make local contracts for material that was purchased, hire the laborers and foremen, to see that the work was properly done, pay local bills, including pay-rolls, keep a record of all the work that was done, and make the necessary surveys, plans, &c.

Q. What was your salary during that period for this work?

A. In 1891?

Q. Yes sir.

A. $120.00 per month.

1381 Q. Was Mr. William Wheeler personally present at Knoxville during the construction of the work of that period?

A. He was here occasionally.

Q. How often, how frequently?

A. I couldn't state as to that; I have no way of telling whether he was here once or five or six times during the year. Either he or his partner at that time, Mr. Parks, were here, I should say as a matter of opinion at least one half dozen times in 1891.

Q. Now state just what work was executed during that period Mr. Kimball?

A. In 1891?

Q. Yes sir.

A. The North Knoxville Works were built and a few, two or three, extensions in Knoxville proper were laid, and in addition, the surveys covering the entire town were in progress for the purpose of plans and records.

Q. Was any construction work done to any considerable extent inside the old city limits in 1891?

A. Only two or three minor extensions of the pipe system.

Q. Were there construction books kept, accounts of the cost of the work, material, &c.?

A. I presume there were. My reports went into the Boston office; further than that I have no personal knowledge.

Q. Did you keep no books here?

A. None whatever, except such memoranda as was necessary to keep the affairs here straight until they passed out of my hands.

Q. It was contemplated was it not, in the erection of the North Knoxville plant at least by Messrs. Wheeler & Parks that it should become a part of the Knoxville Water Company's
1382 plant?

A. I couldn't say what they contemplated I am sure.

Q. Did you not understand that from them to be their purpose?

A. They certainly did not so inform me.

Q. To what officer did you send the accounts of construction of North Knoxville?

A. I sent them in to the firm of Wheeler & Parks by whom I was then employed.

Q. Have you a copy of the deeds from Wheeler & Parks for the North Knoxville property to the Knoxville Water Company for the North Knoxville plant?

A. I have not.

Q. Is there no such deed in the office of the Knoxville Water Company?

A. No sir that would be in the possession of the Treasurer I presume.

Q. To what extent, if any, was the old plant in Knoxville replaced by new work in 1891?

A. There were several thousand feet of small mains two inches in size down to three-fourths of an inch taken up, 3000 or 4000 feet I think, which were replaced by cast iron pipe of sizes from 12 inch to 6 inch.

Q. Why was this change made?

A. To obtain pipes of proper size for fire protection, hydrant service, &c.

Q. On what streets and in what part of the city were these changes made, Mr. Kimball?

Q. I cannot state definitely but principally on Broad street, Central Avenue and short lines leading from these along the cross streets, two-thirds or three-fourths of it all being on the first
1383 two streets mentioned.

Q. Broad street and Central Avenue are the principal streets of the City and have always been since it has been a City, have they not?

A. I should judge so, referring to North Knoxville.

Q. What was the size of those pipe- that you found on those streets in 1891?

A. It ranged from 2 inches down to ¾ of an inch.

Q. And that was inadequate?

A. Entirely so.

Q. Can you give the exact quantity of pipe that was thus taken up and renewed?

A. No sir I cannot.

Q. What is our best estimate?

A. I think somewhere about 3000 or 4000 feet.

Q. Have you no records showing the quantity?

A. No sir there was no record kept of that.

Q. What became of the old pipe?

A. It was sold principally as old junk.

Q. Was it deteriorated?

A. Quite badly rusted, most of it.

Q. It suffers very small injury in taking it up, does it not?

A. Very little.

Q. And you found this pipe in a condition that it was unfit for any purpose except to be broken up and sold as old junk?

A. Not the whole of it; probably one-half of it was sold as such, and the rest of it was sold as second-hand pipe.

Q. To whom was it sold?

A. I couldn't tell you sir.

Q. How much was it sold for?

1384 A. That I couldn't say at the present time. I am relying entirely on memory in regard to those transactions.

Q. Have you no data in your books showing how that was?

A. None at all, as I have testified that all financial accounts, when they were finished at this end were sent in to Messrs. Wheeler & Parks.

Q. Where were the extensions made in 1891 in old Knoxville?

A. There was one laid on East Clinch Avenue to supply a hydrant ordered by the City at the corner of Lithgo street, there was one laid on Jackson Avenue from Gay street to what is now the Hardware house of C. M. McClung & Company.

Q. Were these all?

A. It is all that I can now recall.

Q. What was the size of pipe and the length of pipe used in each of those extensions?

A. The one on East Clinch Avenue was 6 inches in size and 300

feet long; the one on Jackson street was 10 inches in size and 667½ feet long.

Q. At the time Wheeler and Parks came into control of the Knoxville Water Company in 1891, you have stated that there were about thirty miles of pipe line laid in the City, the largest size of which was 16 inches. Does this estimate include all the pipe that had been laid up to that time and the extensions into the territory of what is known as North and West Knoxville and the old Tenth ward?

A. That included all the pipe that was laid on the 31 December 1891, except the pipe in North Knoxville, but it did include
1385 all in West Knoxville and in the territory east of Knoxville.

Q. The old company had laid some pipe in West Knoxville then at that time?

A. Some little.

Q. Not much?

A. Something—for an estimate—less than a mile.

Q. How much of that thirty miles of pipe has been replaced?

A. About ten miles I think I testified to yesterday?

Q. Up to what date?

A. Up to March 31, 1902.

Q. That includes all that has been replaced, does it?

A. It does.

Q. Then one-third of the pipe or about one-third of the pipe that had been used in the construction of the original plant has since 1891 been taken up and replaced by other pipe?

A. I don't think so exactly. The pipe that was taken up was principally smaller pipe of two inches in size and smaller, very little of which was laid in the original construction as far as we can determine, but was laid between the time the works were first built and the time Wheeler & Parks acquired control in 1890 or 1891.

Q. So this pipe that you took up was laid in your opinion after 1883 or 1884?

A. Presumably so from the size of it.

Q. And taken up in 1891?

A. Taken up between 1891 and 1902.

Q. Beginning in 1891 with 3,000 or 4,000 feet?

A. Yes sir.

Q. How long had that been in use that you took up in 1891—that 3,000 or 4,000 feet?

A. That is a question that I couldn't determine. Most of
1386 it was black wrought iron pipe, not coated nor treated in any way to keep it from rusting, and a character of pipe that will rust out in a very few years time.

Q. In a general way state where this pipe that has been taken up—this ten miles of pipe—where it is situated?

A. There is not a ward in the city but what more or less has been taken up from.

Q. Give some of the principal streets on which you found this pipe?

A. Well in 1892 we took up something like 1200 feet of 2 inch pipe on Mabry street. The same year we took up some 600 odd feet on Craig street.

In 1893 we took up around Market Square, Union and Wall streets about 1200 feet of 2 inch pipe, and in the same vicinity including Prince street about 500 feet of 1½ inch, about 100 feet of 1¼ inch, about 400 feet of 1 inch and about 300 feet of ¾ inch.

In 1894 we took up about 1300 feet of 2 inch pipe on Georgia street and various smaller amounts in other parts of the city, and in that same year we took up on Fifth Avenue (East) about 1000 feet of 4 inch, and about 1700 feet of 6 inch replacing it with a 14 inch main at that time.

In 1895 we took up pipe on Hardee street, Depot street, Park street, Broad street, Jennings street, Payne street, Sixth Avenue, Patterson street, Hazel Place, Dora street, Main street, Swan street, Frazier street, Henley street, Lamar street, Perry street, Lanier street, the sizes on the streets mentioned ranging from 4 inch to ½ inch in size, and in amounts from 19 feet to about 500 feet.

In 1896-1897 very little pipe was taken up, what was principally was in Temple Avenue, Locust street, McGhee street
1387 and in two alleys near Market Square. That pipe ranged in size from 1½ inch down to ¾ inch.

In 1897 and 1898 pipes were taken up in Perry street, Lee street and Campbell street, sizes ranging from 2 inch to 1 inch.

In 1898 and 1899 pipes were taken up in Fouche street, Cruze street, Gratz street and in an alley near Market Square, the sizes ranging from 2 inch to 1 inch.

In 1899 and 1900 pipes were taken up in North Fifth Avenue, Atkins street, Brigham street, Union street, Walnut street, alley off McGhee street, Commerce street, Church Avenue, Holston street, Arthur street, Deadrick street, State street, Dale Avenue, Fort Sanders Avenue, Chamberlain street, White Avenue, Seventh street, Cumberland Avenue, Temple street, High street, Broad street, First street, Third street, Bridge Avenue, Fourth street, Cumberland avenue, Eighth street, Highland Avenue, Rose Avenue, South Ninth street and Laurel Avenue, sizes ranging from 6 inch, of which there were 105 feet taken up, down to ½ inch.

In 1900 and 1901 pipes were taken up in Luttrell street, Eighth street, Central Avenue, Clinch Avenue, near the Lonsdale pumping station (that last item being 43/10 feet of 10 inch pipe) North Fifth Avenue, Main street, Pritchard street, Dale Avenue, along the Southern Railway near Asylum street, on Asylum street, the sizes that year ranging from 10 inch, as testified above, down to ¾ inch.

In 1901 and 1902 pipes were taken up in Locust street, Union street, in the lot of the L. B. Pumping station property, High street, Jacksboro street, Luttrell street, Bell Avenue, Campbell street, two alleys near Luttrell street, Third street, Bridge Avenue, Front street, Coleman street, McCallum street and two lines in Lonsdale-
1388 Beaumont plant over in the woods, these lines being 4 inches in size, the pipes taken up this year ranged from an item of 326 feet of 10 inch pipe taken up in the Lonsdale Pumping station property down to ¾ inch.

Q. Has any of the pipe put in since 1891 been taken up and replaced?

A. A very small part of it, amounting to 2,395 feet, which was laid since 1891 and has been taken up.

Q. Why was it taken up?

A. Principally on account of the changes in the sizes of pipe necessary to supply the Lonsdale-Beaumont plant after consolidation.

Q. What was done with the pipe that was taken up?

A. Wherever it was suitable, it was used again in the plant, where it was not, it was broken up and sold as old scrap.

Q. What do you mean by its being suitable?

A. If it had not deteriorated or rusted out to an extent to make it unsafe, it was placed in stock, due credit given for it and then used again whenever pipes of that size were required to be laid in other parts of the work.

Q. How much of it was saved in that way and how much was broken up as old junk?

A. Probably 90% to 95% of it was saved of the cast iron pipes but none of the wrought iron.

Q. I believe you state that none of the pipe laid prior to 1891 that was taken up was saved and used in the plant again.

A. I made that statement only as regards the wrought iron pipe but not as regards the cast iron pipe.

Q. How much of it was there of the cast iron pipe laid prior to 1891 and taken up since?

1389 A. The following shows the cast iron pipe laid prior to 1891 and taken up since:

	12″	8″	6″	4″
Total feet....	208.	24.	4,897.4	6,439.5

Q. Now I notice in replacing pipe that you have put down 1 inch ¾ inch and ½ inch pipe in replacement. Did that replace pipe of that size, or a larger or smaller size?

A. We have laid no pipe of that size of recent years since 1891. We have replaced pipes of that size with larger pipe.

Q. What was the reason for replacing?

A. Because they did not give adequate service for the supply desired principally; in some cases the rusting out of the pipe necessitated replacements.

Q. Well then some portion of this replacement has been on account of deterioration of the pipe that were originally laid?

A. Yes sir, as well as its inadequacy to supply customers along the lines.

Q. Well now about what proportion of it was relaid on account of deterioration of the pipe that had been originally laid?

A. Outside of its inadequacy?

Q. Well, yes?

A. I could not state sir. If I were to make any statement in that matter it would be that there was none that was replaced simply on account of rusting out; that was only one of the elements that made it necessary to replace it.

1390 Q. Well did the rusting out enter into the replacement of all that *that* was relaid?

A. No sir.

Q. Then in what proportion did it enter?

A. I cannot state sir as I have no data that would enable me to form any opinion.

Q. The fact is that a considerable part of the replacement was of pipes of the same size?

A. That is not the fact.

Q. You put in ¾ inch and ½ inch didn't you?

A. We have never laid ½ inch or ¾ inch for the purposes of street mains since 1891.

Q. I am not asking you about the street mains but the pipes generally where you have read off in many places where you put down ½ inch or ¾ inch pipe?

A. I have read off replacements of ½ inch and ¾ inch pipe, but not of pipe of the same size that have been laid in the place of these taken up.

Q. Hav-n't you put down any ½ inch or ¾ inch pipe?

A. We have laid no street mains since 1893 smaller than 3 inch.

Q. What size is required to support a hydrant?

A. Nothing less than 4 inch, and for good service 6 inch.

Q. In the construction work of 1891 were any brick and lumber used?

A. Very little; none that I can recall, except building a temporary tool house or something of that kind.

Q. In the work of 1892 did any brick or lumber enter into the construction work?

A. None of any account.

Q. How about the year 1893?

1391 A. Nothing appears in the analysis at all.

Q. How about the year 1894?

A. In 1894 we built the filter house on the hill and consequently used considerable brick and lumber, also rebuilt the pumping station at the river.

Q. Well from whom did you purchase your brick for that construction work?

A. Most of the brick were purchased from the Knoxville Brick Company.

Q. Were any of them purchased from any one else?

A. I cannot say positively, but none to any account; we have obtained odd lots from some of the other local parties.

Q. At what price were those bricks purchased?

A. Various prices depending on the kind; they were not all of a kind.

Q. Give the prices of the different kinds?

A. I cannot state the prices definitely; I might give them generally.

Q. What did you pay for common brick?

A. Somewhere from $5.50 to $7.00 a thousand; the definite price I am unable to state.

Q. From whom did you make the purchases of lumber that was used?

A. We purchased lumber from T. N. Michaels—The Craig Lumber Company I think it then was—D. M. Rose & Company, of Maxwell & Youmans, and I think two or three other parties wherever we could get it and to the best advantage, but mostly from local parties however.

Q. For what purposes did you use lumber during that year?

A. In the construction of the filter plant, of the extensions to the pumping station and other similar work.

Q. What prices did you pay for lumber?

1392 A. That like the brick, depended on the quality of it. I think the cheapest lumber that we purchased was as low as $12.00 a thousand while some we paid $36.00 for.

Q. What was the object for which you wanted the $12.00 a thousand?

A. We used it for staging—rough work—where rough sawed stock of any description would answer.

Q. Now the $36.00 a thousand, what was that used for?

A. That was used for finishing.

Q. What kind of lumber was that?

A. I believe we got some white pine from Michigan from local parties here and paid them $36.00 for it.

Q. That was a very small amount wasn't it?

A. Comparatively.

Q. That price was for lumber delivered on the yard, the place where you used it?

A. Substantially, yes sir.

Q. Hav'n't you books of account that will show precisely what you paid for lumber?

A. No sir.

Q. Wouldn't your books show that?

A. I keep no books for matters of that kind. I was at this time in the employ of William Wheeler who was doing the work under a contract which he had with the Knoxville Water Company, and all my memoranda, bills, pay-rolls &c., were sent into his office as soon as its use with me ceased.

Q. So you are speaking from memory then?

A. I am speaking from memory.

Q. You made these purchases for material here?

A. Most of them.

Q. I see that you used cement in laying common brick sometimes; what kind of cement was that?

1393 A. We have used two kinds; one known as hydraulic cement, or locally known as Black Diamond, and another known as Portland cement.

Q. Which did you use in laying the common brick?

A. We have used both in laying common brick, depending upon where they were laid and the use they were put to.

Q. Say for laying brick above ground?

A. If it was for a building wall we used very little cement of either kind.

Q. From whom did you buy your cement in 1894?

A. I think most of it was purchased through Sanford, Chamberlain & Albers.

Q. What is the difference in price, relatively speaking, between hydraulic cement and other brands of cement?

A. About two and one-half to one, and from that three to one.

Q. Hydraulic is cheaper?

A. Hydraulic being the cheaper.

Q. Can you give any estimate of the quantity of common brick that you used that you bought at $5.50 a thousand?

A. I don't know that we bought any at $5.50 a thousand. The common brick we purchased ranged somewhere between that and $7.00 a thousand. They were all bought about at the same price, but I have bought brick at so many different times and at so many different prices that I cannot recall just what we paid for them.

Q. You paid the same price, whatever it was, for all the common brick you bought from the Knoxville Brick Company for that year?

A. I think we did, yes sir.

Q. But you cannot remember that it was at that price any more than a price between $5.50 and $7.00?

A. That has been the range of price of brick since I have
1394 been in Knoxville, but I cannot recall the exact price that we paid at that time.

The further taking of this deposition was adjourned until 2 o'clock p. m.

TUESDAY, *January 20th*, 1903—2 o'clock p. m.

The further cross-examination of FRANK C. KIMBALL resumed:

Q. In making up the estimates about which you and Mr. William Wheeler have testified in this case, at what price per thousand did you estimate common brick?

A. At Six dollars per thousand.

Q. That is delivered at the place where they were to be used?

A. Yes sir.

Q. And this estimate covers all of the years?

A. It does; we have established that uniform price for all of the brick of this kind used in the work.

Q. From whom did you purchase vitrified brick?

A. From the Knoxville Brick Company.

Q. At what price did you purchase them?

A. Some at $12.00 and some at $15.00 per thousand.

Q. Will you explain the difference between the $12.00 and $15.00 in price; was it in different years that you paid the different prices or at the same time?

A. It was at the same time. Most of the brick were regular vitrified brick, others, where we had to turn corners had to be made specially, and these were at $15.00 per thousand.

Q. How many of the higher price or vitrified brick did you purchase?

A. I could not say sir how many we purchased.

Q. What proportion were the higher price; a large or small
1395 proportion of them?

A. Possibly 10% or 15% of the whole were the higher priced vitrified brick.

Q. Now are these the prices that were actually paid, or the prices at which you estimated them?

A. Depending upon my memory for the prices they are both the prices actually paid and the prices that we have estimated them at.

Q. They are the prices you estimated them at are they?

A. They are, yes sir.

Q. In your estimate, what proportion of them did you estimate at $15.00?

A. In our estimate, we did not take into account the difference in price paid for these brick, but estimated them all in the analysis for the brick alone at $12.00 a thousand.

Q. Now did you buy any other class of brick than those mentioned?

A. We did.

Q. What?

A. Some trimming brick—that is fancy brick, grey-colored—a special pattern brick, &c.

Q. From whom did you purchase those?

A. I desire to say that I have been answering the questions heretofore with my mind on the years 1894, and 1895, and with this in view, we purchased these from the Knoxville Brick Company.

Q. What price did you pay for these trimming brick?

A. My recollection is $30.00 a thousand.

Q. For what purpose were they used?

A. For trimmings—arch work, &c.

Q. Do these prices run through the other years in your estimates?

1396 A. So far as the common brick are concerned, they do; outside of these two years mentioned, we used no vitrified brick. We did however use a quality of pressed brick during the last year at cost, I think, of about $12.00 or $12.50 a thousand. We also used in the last addition to the pumping station a white enameled brick for the purpose of lining the walls of our pump pit, which cost on board cars in Knoxville $75.00 a thousand, and this same year of 1901 we also used a few pressed brick at the same price of $12.00 or $12.50 as stated above. This I think covers all the different kinds of brick used and their approximate prices per thousand.

Q. The figures you have given are the figures you used in making the estimates, are they?

A. They are the figures we used in arriving at a price for the brick all laid as regards simply the value of the brick themselves.

Q. Well now what additional elements did you figure per thousand for the price of the brick laid in the wall?

A. The brick in the various walls and work were laid in three kinds of mortar, lime, hydraulic cement and Portland cement.

Where it was laid in lime mortar the additional cost over and above the price of the brick is for lime, sand, labor, staging, tools, &c. and substantially the same elements in the other classes of brick work substituting cement for lime.

Q. Well what value of each did you put in per thousand in laying each class of brick?

A. In the lime mortar, value of the lime, ten bushels to the thou-
sand at ten cents per bushel, $1.00; two thirds of a yard of
1397 sand to the thousand of brick at 75 cents a yard fifty cents;
labor both for the mason and helpers, $4.63 a thousand; staging, tools, &c. 87 cents a thousand, total, $13.00, including the brick at $6.00.

The brick laid in hydraulic cement, cement $2.50, sand 37 cents, labor including mason and helpers, $5.00, staging tools, &c., $1.13, total, $15.00 per thousand.

Brick laid in Portland cement, prices substantially the same as in hydraulic cement, except the cement at $7.50 per thousand brick in place of $2.50.

Q. Well what difference did you make between the laying of vitrified and other brick?

A. Seven dollars a thousand, being $6.00 difference in price of the brick themselves and about $1.00 extra for laying them on account of the lesser number of them that the mason could lay in a day as compared with the common brick.

Q. Then you added on to these estimates 20% for certain purposes as entering into the cost of the physical plant?

A. Twenty per cent. was added for engineering, contractors' profit, &c. as stated.

Q. You likewise charged to construction account the tools &c., used in construction did you not?

A. In these estimates per thousand of laying brick, a certain amount has been allowed for staging, tools, &c., the allowance being made principally however for lumber and staging used around the building walls.

Q. But you have not in the estimates made a charge of the tools themselves to construction account?

A. Wherever they were purchased they were charged to construction account?

Q. Did you do any of this work by contract?

1398 A. This work in 1894 and 1895 was all done for the Water Company under contract with Wheeler & Parks.

Q. That is William Wheeler, the President of the Water Company?

A. William Wheeler who succeeded the firm of Wheeler and Parks.

Q. And at that time President of the Water Company?

A. No sir he was not.

Q. Then he was supervising engineer?

A. He was.

Q. He was supervising engineer of this work done for the Water Company, was he not?

A. In a sense, yes sir.
Q. And you were the local engineer in charge?
A. I was.
Q. I believe you stated that at the time these estimates were made up you spent some eight or ten weeks at Boston with Mr. Wheeler in doing this work?
A. That is correct.
Q. That was at the office of William Wheeler, formerly Wheeler & Parks, was it not?
A. It was in the Treasurer's office in Boston.
Q. That is where Mr. (William) Wheeler keeps his office isn't it?
A. It is in the same building but a different part of it.
Q. Did you consult the books of Wheeler & Parks to ascertain what was actually paid for these brick?
A. I did not.
Q. Did Mr. Wheeler?
A. Not to my knowledge.
Q. The reports that you made to Mr. Wheeler showed exactly what they cost—or to Wheeler & Parks—didn't they?
A. I presume the bills that I sent in from time to time
1399 showed what were paid for them, yes sir.
Q. They were sent to Wheeler & Parks at Boston, were they?
A. They were.
Q. Did you consult them, or call for them in making these estimates to ascertain the prices actually paid?
A. I did not.
Q. And you don't know except from unaided memory what was actually paid for the material do you?
A. As I stated before, I am depending entirely on memory for that work in the years 1894 and 1895.
Q. The price of brick wasn't uniform in all the years you were figuring on, was it Mr. Kimball?
A. As I stated before all the common brick that have been purchased in Knoxville between 1891 and the present time by me, have ranged in price from $5.50 to $7.00 a thousand delivered. We have bought some at both of those prices as well as at prices between the same.
Q. So there has been a range in price of $1.50 in the different purchases?
A. In common brick, yes sir.
Q. And your reports to Mr. Wheeler would have shown what the price was in a particular year, would they not?
A. Undoubtedly.
Q. And they were there in the same building where you were making these estimates that you spent eight or ten weeks in making, and you never consulted them?
A. That is correct.
Q. Mr. Wheeler at that time was President and Supervising Engineer of the Knoxville Water Company?
A. At what time do you refer?

Q. At the time you made the estimates.

1400 A. Last summer?

Q. Yes sir.

A. He was, yes sir.

Q. And had control of its construction books didn't he, as well as those of Wheeler & Parks?

A. Not if I correctly understand your meaning as to construction books. If you mean books of account, he did not—they were in the care and custody of the Treasurer.

Q. Not Wheeler & Parks, were they?

A. The books of the company as you stated.

Q. And you say during that ten weeks those books were not consulted by you or Mr. Wheeler?

A. The books were not consulted at any time for prices of material to determine these estimates.

Q. What was the cost of cement—Hydraulic and Portland—in 1894 and 1895?

A. I think we paid $1.25 for Hydraulic cement in 1894 and 1895 and about $3.25 for Portland cement per barrel.

Q. What was the cost of lime and sand at that time?

A. We were paying I think ten cents a bushel for lime and 75 cents a yard for sand.

Q. That was for lime and sand delivered as were the brick?

A. Delivered in all instances.

Q. How did the price of cement in those years compare with the cement used in the work before and subsequently to your knowledge?

A. Hydraulic cement since then has been as low as 90 cents a barrel and at the present time I think is about $1.10. Portland cement we have purchased as low as $2.25 although the last purchases we have made cost us $3.25 per barrel.

Q. I believe you have stated from whom you purchased this cement in 1894 and 1895?

1401 A. From Sanford, Chamberlain & Albers.

Q. How many thousand of brick will a barrel of cement lay, according to your estimate, Mr. Kimball?

A. Of Hydraulic cement, one barrel will lay approximately 500 brick; in Portland cement, one barrel will lay approximately 400 brick.

Q. Now when did cement drop from the prices that you say you estimated in 1894 and 1895 to the other prices that you have designated?

A. After 1895, we had no occasion in Knoxville to use much cement until 1900, when in building the first addition to the settling basin on the hill we paid from $2.90 to $3.10 a barrel. In the Fall of that year, when we built the intake tower, we paid I think $2.75 to $2.90. In 1901, when we built the second addition to the settling basin on the hill, we paid $2.25 a barrel for Portland, while in 1902 the Portland cement used in the stand-pipe foundation cost us for the first of it $2.25, but before we had finished $3.15.

Q. How much did you buy at the latter price?

A. I couldn't state off-hand, but I think out of three car-loads more or less, that it took for that work, about one-third of it was at the latter price.

Q. From whom did you buy it?

A. The cement in 1902 was purchased through Sanford, Chamberlain and Albers.

Q. Did you buy cement at any time from Chandler & Company?

A. We have, yes sir.

Q. When was that?

A. The cement furnished for the first addition to the set-
1402 tling basin in 1900 came from them; also the cement used in the intake tower in the latter part of that year, as well as all used on the pumping station work in 1900 and 1901.

Q. What did you pay for that you bought from Chandler?

A. That run from $2.75 to $3.10.

Q. How much did you purchase at the latter price?

A. I couldn't state sir in barrels.

Q. Now as to the quantities of brick you used in the construction of work that you personally superintended, how did you get at that in making up this analysis?

A. By taking the cubical contents of the walls and multiplying the number of cubic feet contained in the walls and other work by "17" which gave the number of brick estimated upon.

Q. You did not determine it then by the actual purchases made as shown by your reports to Mr. Wheeler or by his books?

A. I did not.

Q. Nor did you determine the quantity of lime used nor the quantity of cement, nor the quantity of sand, nor the actual amount paid for labor from your reports or from the books of Mr. Wheeler?

A. I did not, nor would it have been possible for me to have done so had I had them.

Q. Didn't your reports show what you paid?

A. They showed how much we paid per thousand brick or per bushel of lime or number of yards of sand, but not as to the quantity that went into each part of the construction.

Q. It would have shown all the purchases you made of those things and the price, your reports?

A It would have shown certain totals which however are
1403 not comparable at all with the work executed.

Q. You didn't report anything to him "paid for" that didn't go into these, did you?

A. I am not accustomed to doing that sort of business, General.

Q. I didn't think you were. Now certain buildings in which lumber was used were constructed in 1894 and 1895 and at other dates under your supervision, were they not?

A. Yes sir.

Q. You have already testified as to the prices of lumber and from whom you bought?

A. Yes sir, the maximum and minimum prices.

Q. Did you ascertain those prices and the quantity of lumber used in the same way that you have estimated the price and number of brick?

A. Yes sir, except as regards certain of the lumber the plans of the buildings showed in detail, which rendered a measurement of the work or any estimation in that case unnecessary.

Q. Have you those plans?

A. The plans are on file in our office.

Q. Were they executed before the work was done?

A. They were.

Q. By whom?

A. The plans were made in the office of Mr. William Wheeler in Boston.

Q. The plans for the buildings?

A. Yes sir.

Q. How about the specifications?

A. The specifications were not written as is usual when plans are furnished by an architect to a contractor. They consisted more particularly of instructions by letter from time to time and
1404 correspondence both from me to him and him to me in regard to certain details of the work.

Q. Then just what do the plans you speak of consist?

A. Plans showing the form, outline and method of construction of the buildings referred to.

Q. And that was all there was of it and you filled out the balance from your knowledge of what was desired?

A. Except as I state there was rather a voluminous correspondence during the entire progress of the construction giving the necessary directions as to ways and methods and in some instances undoubtedly my suggestions as to what should be done for Mr. Wheeler's concurrence and acceptance.

Q. Mr. Kimball, I see an item in here of meter boxes; what was the actual cost to your company of meter boxes?

A. At the present time the wooden part of the meter box is delivered to our yard at $1.45 each. These have to be tarred, which is done by our own men at an estimated expense of 25 cents each. The iron top or cover which goes on the wooden box costs $3.15 each, making the total cost of these boxes ready to set, but in our yard $4.85 each.

Q. Who furnishes the tops?

A. At the present time the Sanford-Day Foundry Company.

Q. These are for all sizes?

A. For all sizes up to two inch.

Q. Up to two inch?

A. Yes sir.

Q. Now I want to turn to your services: You have explained what is meant by service in your examination in chief and that sometimes they have been put in at the expense of the consumer and sometimes at the expense of the Water Company. I will ask you at what period or during what periods they were put in at the expense of the consumer and during what period they have been put in at the expense of the Water Company?

1405 A. That I have already testified to in my direct examination but I can give it to you again if you desire.

Q. I hav'n't your testimony before me Mr. Kimball—I would turn to it if I had—probably you incidentally stated it?

A. Service pipes we have assumed were laid entirely at the expense of the consumer to March 31, 1895. From that date until March 31, 1900, they were laid by, the company at a charge of $5.00 each to the consumer. From March 31, 1900, to July 1, 1901, they were laid entirely at the expense of the company and from July 1, 1901, forward they have been laid by the company at a cost of $5.00 each to the consumer; but it might be well to state in explanation of this, that this refers only to the ordinary sized house connection of ¾ inch pipe, and does not include larger size connections required for manufactories and other large users, nor does it include service pipes laid within the brick-paved districts, nor since March 31, 1901, where it has been necessary to make an extension of the main pipes to reach prospective consumers.

Q. Upon what terms do you make extension of pipes to prospective consumers upon applications at all dates, state generally?

A. Since about 1893 extensions of the piping system have been made to supply prospective consumers at the rate of 150 feet of main pipe to be extended for each applicant for water service.

Q. Well if that does not reach them, then what?

A. As a rule we do not make the extension unless there are enough applicants at the rate of 150 feet for each consumer to reach them, unless they desire to enter into a special agreement with us to pay us an income commensurate with the extension required?

1406 Q. Have you not made a good many extensions upon those special arrangements?

A. We have made some.

Q. Well what in general are the terms upon which you make an extension of that sort?

A. You mean where it exceeds 150 feet?

Q. Yes sir, what do you require of the water consumer?

A. We have two or three methods whereby it is done: One, where the consumer will guarantee us, say for a term of five years and enter into a contract to that effect to pay us a sum of money which will give us approximately ten cents per foot per year income on the amount of pipe we have laid. Another method under which some work has been done is where the property owner or party desiring the extension will pay the entire cost of that extension and receive back a certain proportion of all water rents collected from it until such repayments in water rent have equalled the advanced payment for the pipe laid.

Q. Now will you state how many services have been put in during the respective periods that you have designated above by consumers, and the prices at which put in, and then the number put in by the company without charge to the consumer?

A. That is all stated in this analysis year by year.

Q. Well I can't go through the analysis as easily as you can?

Mr. CALDWELL: We except to that testimony on the ground that it is already in the record and it is not incumbent upon us to analyze

or to epitomize the testimony for any purpose, but in order to save time we will, for this particular question, waive the exception.

A. I cannot give you the answer now, but I will give it to you later.

1407 Q. Now upon what terms were services put in in excepted cases for requiring larger pipe and in the brick-paved districts of the city?

A. Where larger pipes than ¾ inch were desired and allowed, they were put in at the expense of the consumer from the main to their property line; within the limits of the paved districts, and also where extensions have been made, this latter since March 31, 1901, a fixed charge of $10.00 for the service in accordance with the rules of the company has been made.

Q. Since what date?

A. The charge of $10.00 within the brick-paved district has been made since the brick-paving was laid.

Q. Well what is the expense to the consumer of putting in these larger services for manufacturing purposes?

A. It depends entirely upon the size and the length of the service —its actual cost whatever that may be.

Q. Now I will ask you what is the average or ordinary length of pipe and ditching required for putting in a ¾ inch domestic service?

A. We estimate 25 feet.

Q. I want to go back and ask you in regard to the price of those metal tops for meter boxes—whether the price you gave above is the present price or whether it has prevailed all the time, and if it has not what has been the prices at different dates in the past?

A. The price I gave of $3.15 is the present price. We have paid as low as $2.60 for them and as high as $3.25, the price depending largely upon the price of cast iron. Just how many have been purchased at each price it is impossible to state.

1408 Q. When did the present price of $3.15 begin?

A. I think it has been at its present price since about last July.

Q. What was it before that time?

A. The last price before that was $3.05.

Q. Well go on back now and give the prices as well as you can?

A. I wouldn't undertake to state how far back that was, but I think that covers the previous year; the lowest prices stated being about two years back while the highest price was even further back than that.

Q. How far back was the highest price?

A. I think along in 1895 when we first began to use this style of top. The price then was so much higher on account of our using a heavier weight top than we do now rather than because iron was higher.

Q. Have you at any time since you have been connected with this company, or has it been say at any time since 1891 to your knowledge that these services have been put in for consumers otherwise than by direct employment of labor by your company?

A. Not since 1891, no sir.

Q. In 1891, before adding the North Knoxville plant, what were the number of services of the Knoxville Water Company?

A. I cannot state exactly but approximately 1800 at the close of 1891.

Q. Can you state approximately how many were added during the year 1891?

A. No sir, I have no record of it.

Q. How many services were there in North Knoxville at the time it was added to the Knoxville Water Plant?

1409 A. I think about 130 or 140.

Q. Do you include in that computation the services that the old plant had in North Knoxville, or exclude them?

A. I am including all in North Knoxville at the close of 1891.

Q. How many of those were original services of the Knoxville Water Company established before the North Knoxville plant was initiated?

A. I think about all of them. If my recollection serves me correctly from the time we commenced to build the North Knoxville plant to the close of 1891 there were few, if any new applications taken in North Knoxville—not over 8 or 10 at the most.

Q. What number of services had the Knoxville Water Company, including North Knoxville in April 1895, also March 30th 1901 and to the present date?

Mr. CALDWELL: We desire to except to the question as the evidence is already in the record.

COMMISSIONER: I will withhold my ruling until in the morning.

The further taking of this deposition was adjourned until 9:30 o'clock Thursday morning January 22 1903.

1410 THURSDAY MORNING, *January* 22, 1903.

Examination of FRANK C. KIMBALL resumed.

COMMISSIONER: In regard to the last question propounded by counsel for defendant on yesterday afternoon, the Court holds that one officer of the company has already given this answer obtained from the books, and another officer of the Company will not be required to make up similar results from the books, but the books may be inspected by the witnesses for the defendant, if it so desires.

General PICKLE: We except to the action of the Master, the object of the question being to see whether the two officers will give the same, or conflicting testimony in regard to the matter, and to obtain fuller information than that given by the other officer.

Q. Mr. Kimball, had you visited Knoxville prior to 1891?

A. No sir.

Q. Then you knew nothing whatever about the conditions existing as to the streets, &c. prior to that date except what you may have inferred from what you saw at that date?

A. I had no personal knowledge as to existing conditions before that date.

Q. You had no personal knowledge as to the price of labor, material, &c. at Knoxville that entered into the construction of the original plant and its additions prior to that date had you?

A. I had no personal knowledge directly at Knoxville but I had in this section of the country.

1411 Q. Had you any personal knowledge as to the actual price paid for any of the materials that entered into the construction and additions to the original plant prior to 1891?

A. Not personal knowledge of those specific articles, but of articles similar in kind and character, I had.

Q. Had you done any work in Eastern Tennessee, or in the State of Tennessee prior to that date?

A. I had not in the State of Tennessee; I had, however in the adjoining state of Kentucky.

Q. At what date had you done work in Kentucky?

A. The year previous to my coming to Knoxville, 1890.

Q. You had not done any work in Kentucky prior to that time, had you?

A. Prior to 1890, no, sir.

Q. Now some of the items that enter into yours and William Wheeler's estimates of the cost of the original construction of this plant, relate to buildings that had entirely disappeared when you came here in 1891, do they not?

A. That is not the fact. We have estimated on no buildings whatever except such as existed when we came here.

Q. Then your estimate is based upon what existed and was here to be seen in 1891?

A. Yes, sir.

Q. Now what buildings existing at that date did you subsequently replace, and at what date were the replacements made?

A. That is all set out in the analysis which we have submitted.

Q. Well will you state here briefly so that I may further examine you in regard to the matter what they were?

A. I will read from the analysis if the Court so desires?

1412 Q. I don't care for you to read the analysis; you know the buildings?

Mr. CALDWELL: I dislike to be perpetually excepting to such questions, but we have put this evidence in the record and this witness has sworn to it.

COMMISSIONER: If you know this, having it in your head, you may answer it; if you do not know it, state then that you do not know it.

A. I can give from memory possibly the larger part of the work, although I cannot quote dimensions or quantities. One building, that has been discontinued entirely at the pumping station, is a tool house, which was situated on the westerly side of the pump house,—at a later date removed to the easterly side, and has since been destroyed, being replaced by the brick tool-house.

The pumping station itself has, in the course of the years we have been here, gradually undergone reconstruction, parts of it at one time being taken down and rebuilt and parts at other times, until to-day there is some, I cannot say how much, of the original building left. As I recall, there was a store-house upon the Craig street end of the pumping station lot, which has since been entirely removed. I believe there was an old dwelling house on the Craig street end of that lot when we first came here which was very shortly removed, but no record of that has entered into our analysis at all. This comprises all of the buildings that I now recall having been removed or done away with.

Q. What became of the old dwelling house that you have spoken about?

A. I couldn't say, sir; I have no knowledge whatever.

1413 Q. Was it on the lot when the property was originally purchased by the company?

A. If I saw it there in 1891, it must have been, but it wasn't there more than a year or two later, and it is not included in our analysis as to the cost of the plant at all.

Q. No credit allowed for its use, or material?

A. I know nothing about the building further than what I have stated.

Q. Now were there any other buildings that had been constructed by the old company prior to 1891 than the ones you have named?

A. I couldn't say, sir, what they had constructed prior to 1891.

Q. Were any others standing at the time you came here in 1891 than the ones you have named, that had been erected by the old company on any of its property?

A. I wouldn't undertake to state from memory; whatever there were have been duly set out in the analysis.

Q. You remember no others?

A. I remember no others just now.

Q. Have you the data for which you estimated the cost of those buildings?

A. We have sketches, notes, and plans with more or less degree of fullness and accuracy from which we worked in estimating the quantities contained in those buildings?

Q. Are they in the office of the Knoxville Water Company at Knoxville?

A. They are.

Q. Will the witnesses of the City be permitted to examine them for the purpose of making like estimates, or if not, will you furnish copies of them, or the originals?

A. They are at the disposal of the Master; whatever action

1414 he may take.

COMMISSIONER: The Master will require that such data be put at the disposal of the witnesses for the defendant.

Mr. CALDWELL: We tender the data called for, and have brought a considerable portion of it from Boston in response to the questions asked by counsel for defendant last December.

Q. Of what date did you estimate the cost of these buildings?

A. As near as possible, substantially of the date that they were presumed to have been built,—in the case of buildings erected prior to 1891,—and of buildings and structures erected since as of the date of their construction.

Q. What kind of material entered into the construction of these buildings chiefly?

A. Brick, lumber, lime, cement and ordinary building materials.

Q. Have you estimated brick, lumber and the other materials that entered into these buildings on the same basis as that you have already testified to in this deposition?

A. We have, yes, sir.

Q. In the construction account of the plant prior to 1891, I find this item: "Tools, teams, vehicles, office furniture and fixtures" estimated at $2000.00. From what sources do you get the items and their value that make up this amount?

A. This is, as it is stated, an estimate pure and simple and without any substantial amount of, if any, items to base it upon, other than the general experience as to what would have been, or might
1415 be required in these lines in works of this character, there being no record or data from which to make up an itemized list.

Q. Have you any knowledge of any item making up this amount, and its value as having actually existed; if so, please give the items that you know of, and their value?

A. I can add very little to my former answer, except that I do recall a team which the company had in 1891, sundry office furniture, tools necessary for street work in the operation of the plant, both in the street and at the pumping station, but to itemize them more fully, or to place an itemized value on them, it would be impossible at this date.

Q. Can you fix the value on anything that you know existed prior to 1891?

A. Nothing that would be of any service in this case at all.

Q. What did the office furniture and fixtures consist of?

A. Consisted of counters, desks, safes, chairs and various articles necessary to make up an office of this description.

Q. Well now what were they worth?

A. I couldn't tell you, sir.

Q. What was the team worth?

A. I am not an expert in horse flesh. The horse that they had then, served our purpose up to 1900, ten years later. The wagon was in use for two or three years subsequent to 1891.

Q. It was then a one-horse wagon and team was it?

A. Yes, sir.

Q. Any other teams?

A. It is my impression that they did have a dray at that time, but I am not certain as to that.

1416 Q. The office furniture and fixtures were of the most ordinary character weren't they that you found there when you came?

A. That is a matter of opinion, perhaps.

Q. Well they were cheap articles, were they not?

A. That depends upon what you term cheap articles. They were thoroughly suitable for the work which they were built for and for the position they were in.

Q. Well what I mean, they were inexpensive?

A. That is a term that I am unable to define, General. They were not extravagent.

Q. How many rooms did the Water Company occupy as an office at that time?

A. In 1891?

Q. No, from 1884 to 1890?

A. I have already testified that I had no personal knowledge of this town prior to 1891.

Q. Well when you first came into the office how many rooms did they occupy?

A. In 1891 they had two rooms in the Minnis Building and one room in the basement of an adjoining building.

Q. I believe you stated there is no itemized account of any of the articles that you estimate in this $2,000 in any of the books of the Water Company?

A. I did not so state.

Q. Well is there?

A. I do not know, sir. I am not the custodian of the books. My statement was that we had at our disposal no itemized account of them.

Q. You did not examine the books to see whether there was any statement of the articles and their cost?

A. I have so testified heretofore.

1417 Q. The furniture and fixtures had been in use some time—bore marks of that kind.

A. Are you referring to the furniture I saw in 1891?

Q. Yes sir.

A. I had information to the effect that it was new furniture at that time, not having been in use more than six or eight months.

Q. Then the books ought to show its cost, oughtn't they?

A. I cannot say as to that, not having examined them.

Q. Will you state why you didn't consult the books about an item of this sort about which you had no personal knowledge?

A. For the reasons above given, in the estimate of the cost of a plant of this kind the books do not in any respect show unit nor quantity prices, and are not so kept in any set I have ever had anything to do with from which a proper estimate of cost could be obtained, especially where the plant had been built under the supervision and control of various parties as this had been.

Q. Well what do you mean by that last remark "as this had been." How was this plant originally constructed as you understand?

A. The best knowledge we have is that it was built in the first instance under a contract with one F. M. Loweree, that from the time his contract was finished to 1891 sundry work was done by

parties of whom I have no knowledge—presumably by parties employed by the Water Company at that time. Since 1891 work has been done by the Water Company direct, also under contracts with Wheeler & Parks, so that no one or several sets of books could show, or do show the actual construction cost of a plant of this kind.

Q. But the books would show the price of a horse or wagon or a set of chairs, or a table, wouldn't they?

1418 A. It would be natural to suppose that they would, if they were bought by the Water Company.

Q. Don't the old books of this company, such as were kept prior to 1891 indicate that the construction of this plant was done directly by the Water Company and paid for directly by the Water Company?

A. I am not the custodian of those books, neither have I examined them sufficiently to answer your question.

Q. Hav'n't you examined them enough to know that the accounts are not kept with Mr. Loweree, but with the various parties from whom materials were purchased and that they are accounts between those parties and the Water Company?

A. I have not, no sir.

Q. I will ask you what has become of this $2,000 item or what disposition have you made of it in your statement; in other words have you charged it off as having disappeared as depreciation?

A. This $2,000 item for tools, teams, &c. has been entered in the depreciation account as culminated depreciation, it having all gone out of use, so far as we are able to trace it.

Q. Of what date is this item treated as culminated depreciation?

A. Just what date these particular tools, &c. went out of service we are unable to state, but my experience, not only here but elsewhere, goes to show that tools and materials of this description have a life of from 2 to 10 or 15 years, depending on their character and the use they are put to, and we have estimated in the light of our experience with articles of this description that their life is something less than eight years, and assuming it to be eight years, we have so calculated the depreciation.

1419 Q. Assuming it to be how many years?

A. Eight years.

Q. Then the depreciation of this article was complete, or the most of it complete at the time the present management came into control of this company, was it not?

A. We did not so consider it. We considered this item of $2,000 as being a conservative amount which should have been expended in articles of this kind in the period from the time the Water Company commenced to operate to 1891. The average date of this investment therefore would have been somewhere in the neighborhood of March 31, 1886, and eight years from this date would have brought it to March 31, 1894, the assumed date of the culminated depreciation of this particular item.

Q. Do you know to what account, whether that of construction or operating expenses, these articles were charged in their original purchase?

A. Having had nothing to do with their purchase, nor with the books, if any books there were containing records of them, I cannot answer.

Q. All of the wrought iron pipe laid prior to 1891 and taken up subsequently which appears in your estimate here, was treated as worth nothing, wasn't it?

A. Not exactly. It is treated as worth only what it cost to take it up.

Q. Then it was treated as if it had been left in the ground so far as this estimate was concerned?

A. Substantially, yes sir.

Q. So the value of that wrought iron pipe went entirely out of the plant at the time it was replaced by other pipe, did it not?

A. So far as the intrinsic value is concerned it did, having answered its purpose?

1420 Q. You think that wrought iron pipe was put down subsequent to the date of the original construction, I believe?

A. It would appear so, although I have no positive knowledge to that effect.

Q. Did you find it on streets where it was inadequate to supply the water required, and where it was evident that it had been inadequate for years on account of the buildings that you saw, and the situation?

A. That question calls for two answers in one and if you will separate it I will try and answer it.

Q. Just answer both of them?

A. Answering the first part of your question, from time to time these small pipes have proved to be inadequate to supply the uses desired and have then been taken up and replaced by larger pipe, in some instances on account of the city ordering fire hydrants where they were not previously desired, necessitating such increase in the size of pipe. As regards its having been inadequate for years, I do not recall a single case of this kind; certainly none,—to my best recollection,—was ever called to my attention, or if it was, it has escaped my memory.

Q. Did you find it around and in the vicinity of Market Square—in the heart of the city?

A. We did, yes sir.

Q. What was the condition of that pipe when you took it up?

A. Well some of it was in very good shape and undoubtedly except for capacity would have lasted a good many years. Other of it had begun to deteriorate and was in all stages of deterioration from such condition perhaps requiring immediate replacement to a condition where deterioration had just set in.

1421 Q. What is the method of putting down wrought iron pipe; what do you resort to to preserve it?

A. Wrought iron pipe is manufactured with several kinds of coating to preserve it from rust, the most common of which in this section is galvanizing; sometimes it is tarred and at other times it is enameled.

Q. What kind was this that you took up?

A. Some of it was tarred pipe; we have taken up a little, but not very much galvanized, while the larger part of it was uncoated or untreated black pipe.

Q. Have you, since you have been in control of the plant, put down any of that sort of wrought iron pipe uncoated and untreated?

A. We have not, for we have not been laying any street mains of wrought iron pipe.

Q. Now of the cast iron pipe laid prior to 1891 that you have taken up since; you gave some credit for portions or all of it; did you credit all of it?

A. All cast iron pipe that has been taken up has been credited at the full cost of new pipe at the time it was taken up, less the expense of taking it up.

Q. Now, in the original construction of the plant, you charge for cast iron pipes as originally put down, 16 inch $2.81 per foot; 14 inch $2.23 per foot; 12 inch $1.80 per *per* foot; 10 inch $1.37 per foot; 8 inch, $.98 per foot; 6 inch, $.79 per foot, and 4 inch $.51 per foot. Now at what price do you credit this pipe, net, after taking it up; do you not credit it as follows:—16 inch $.30 per foot; 12 inch $.22 per foot; 10 inch $.18 per foot; 8 inch $.15 per foot; 6 inch $.12 per foot; 4 inch $.10 per foot and 3 inch $.10 per foot?

1422 A. In answer to your question I will state that the prices you have mentioned as the credits for these various sizes of pipes, are the cost of taking these pipes up, which is subtracted from the value of the pipes themselves as taken up to get the net price.

Q. So that you credit the original price less these sums?

A. No sir, we credit the value of the pipe itself. The first figures which you mentioned are the prices per foot of the pipe all laid including labor as well as the pipe itself, while in crediting it back, we only credit the value of the pipe as new pipe less these amounts per foot as the cost of taking them up.

Q. Well then as the table does not state the price of the several sizes of pipe, what was the price at which you estimated these—the prices of pipe which was subject to these deductions for taking up?

A. This cast iron pipe was taken up in various years and the same value was placed upon the pipe taken up as was charged in that same year for new pipe.

Q. Now to what account did you charge the expense of taking up pipe, to operating expenses or to construction account, in the keeping of your books?

A. I can only answer that question for the past four years since I have been superintendent. During that time, all pipe laid has been charged to extensions on the reports that I have sent in to the Treasurer. What disposition he made of them on his books, I cannot say, except that I have every reason to believe that he followed the same accounts that appear on the reports from my office.

Q. But you don't know what the Treasurer did with it, do you?

1423 A. I have just answered that question.

Q. He has already testified about that. Well now, this

pipe that would be taken up, went back into the plant did it not at subsequent dates?

A. When it was taken up, it was credited,—since I have been superintendent at least,—to extensions account, and when it was put back it was charged again to extensions account the same as new pipe.

Q. So it went back into the plant at the same price under the estimate you have made?

A. If it went back the same year it was taken up, it was credited at the same price as when taken up.

Q. What if it went back at a subsequent year?

A. It was then charged at the price that pipe was selling for in that year—at the price that we bought and paid for pipe in that year.

Q. How long had this cast iron pipe been in use that was taken up and afterwards restored to the plant at the price of new pipe?

A. I couldn't state sir.

Q. It had been in there several years before it was taken up in every instance wasn't it?

A. The presumption would be that it had; I cannot state from definite knowledge.

Q. How much of the pipe and where situated, that you figured into your estimates, that still remains in the ground and is not now used or wasn't used the 30th of March, 1901 by this plant for the distribution of water?

A. I don't know exactly what you mean by not "being in use." There was no pipe laid on the 31st of March 1901 to my knowledge but what was filled with water supplied from the plant and
1424 capable of being used for the purpose for which it was laid.

Q. Is there now any such?

A. There is not.

Q. Now hav-n't you some pipe in the ground that entered into the composition of the Lonsdale Beaumont Water Company that is not in use and wasn't in use the 30th of March 1901?

A. Not to my knowledge.

Q. Well how about the pipe laid from the springs of the Lonsdale Beaumont Water Company to the stand-pipe, isn't that still in the ground?

A. There was never any pipe to my knowledge laid from the springs to the Lonsdale Beaumont stand-pipe. There was a line of partially clay pipe and partially cast iron pipe laid from the springs to the old Beaumont-Lonsdale pumping station, but this line was discontinued and taken up before the date that you mention.

Q. How about the pipe in the old Ex-Tenth ward?

A. That is still in place and still in use.

Q. Is it supplying water?

A. To a certain extent, yes sir.

Q. On page "39" of Mr. William Wheeler's deposition, and being a part of the schedule of your and his estimates for additions made during the 15 months ending March 31st 1893 I find this item: "Horse, wagon, harness, &c. about $300.00; Safe $450.00; Office

furniture and fittings $125.00; Sundry tools &c. $225.00." Where did you get these items?

A. Regarding the horse, wagon, harness &c. I purchased them myself upon orders from the company. The safe was purchased while I was in Knoxville by the then superintendent of the company, I think. The office furniture and fittings were sundry
1425 desks, chairs &c. purchased about that time, while the sundry tools, &c., as my recollection now serves me, consisted of a couple of tapping machines and some other small tools used about the plant of which I had personal knowledge.

Q. Have you a book account of these items?

A. I have not, no sir.

Q. Is there in the office of the company such account?

A. As I have before testified, I am not the custodian of the books and therefore cannot state; I presume that there must be.

Q. At this date did the company have more than one horse?

A. After the horse in question had been purchased, they had two.

Q. How many wagons had they?

A. Well they had at least two and perhaps three, but I am not certain as to that.

Q. Did you not have a safe when you came here?

A. We did.

Q. And was this the purchase of an additional one?

A. It was; we have both of them now in our office.

Q. You have the one there that enters into this $2,000 item already mentioned?

A. I could not say as to that. As I have before testified that $2,000 is not made up of items. We had a safe there in 1891 and we still have it.

Q. Well it oughtn't to be in the depreciation account, ought it?

A. In the way the tools account and depreciation account is made up, I consider them perfectly proper.

Q. Has this item here passed into depreciation account also?

A. It has been treated as all other items of tools, &c. and
1426 given an average life of eight years, and as I before testified some of these tools last only one, two or three years while others have an indefinite life perhaps, but the average life of articles of this description does not exceed eight years which is the period taken in this estimate to figure the depreciation upon.

Q. At any rate you have both of these safes in your office and they have passed into the depreciation account under your etsimate?

A. We have both the safes in the office, and some of the other tools purchased did not last more than a year or two which balanced the life of the other articles.

Q. You have made this item out from actual expenditures you made of these things?

A. No sir not from actual expenditures but from my personal knowledge as to the cost of the articles, and a fair cost placed upon them to the best of my ability.

Q. What I mean to say is the actual purchase price?

A. Partly, not wholly.

Q. Then it is partly estimated?

A. Partly, in the last two items.

Q. At the time you made up these items you were at Boston and in the same building where the Treasurer's books were, were you not?

A. I have so testified.

Q. Well now Mr. Kimball what kind of hydrants—I mean fire hydrants—did you find in here—how many nozzles—as constituting a part of the original construction of this plant?

A. We found some of one nozzle and some of two nozzle.

Q. Did you find any with three nozzle?

A. No sir.

Q. What is the difference in price between one, two and three nozzle hydrants?

1427 A. Well, of the same make, style and character, there would probably be a difference of about $2.00 between one and two nozzle, and about the same amount between two nozzle and three nozzle provided all other parts of the hydrant were identical.

Q. What make of hydrant did you find in here?

A. In 1891 we found a hydrant made by the Ludlow Manufacturing Company, a hydrant made by the Chapman Valve Manufacturing Company and a hydrant made by the Coffin Valve Company.

Q. Were they frost proof hydrants?

A. They were.

Q. How many were one nozzle and how many were two nozzle hydrants?

A. On December 31, 1891 there were 99 *one nozzle* hydrants and 42 two nozzle hydrants connected with the plant.

Q. What were the sizes of those hydrants, if they go by sizes; I do not know I am just inquiring; what is the ordinary capacity size of the one nozzle, two nozzle and three nozzle hydrants?

A. We have in Knoxville one and two nozzle hydrants, having both 6 inch and 4 inch connections, which we found here in 1891 when we first took charge of the plant.

Q. What was the size of connections of the hydrants that you found in here in 1891?

A. Of the 141 hydrants which we found here in 1891, 65 of them had 6 inch connections and 76 had 4 inch connections.

Q. What difference in the price of hydrants is there on account of the size of the connections?

A. My best recollection is, other things being equal about $5.00.

Q. Between 4 and 6 inch connections?

1428 A. Between 4 and 6 inch.

Q. Since 1891, how many fire hydrants have been put in and how many nozzles, and what was their capacity?

A. Down to what date.

Q. Down say to March 30th 1901, and then you may say what has been put in since to September 30th 1902?

A. On March 31st 1901 there were connected with the plant 95 one nozzle hydrants, 148 two nozzle hydrants and 23 three nozzle hydrants.

Q. What was the number put in between those respective dates?

A. As there were 141 hydrants in 1891 and 266 in 1901, the number put in between those dates is 125. The number of hydrants on September 30th 1902 was 250, being 91 one nozzle, 138 two nozzle and 21 three nozzle hydrants.

Q. What make of fire hydrant has your company purchased since you went into control in 1891?

A. The hydrants that we have purchased have all been of the Coffin Valve Company's make. This does not however include the hydrants in the Lonsdale Beaumont plant which has been built since 1891, which hydrants were of the Galvin Valve Company's make.

Q. How many of the Lonsdale Beaumont hydrants are there?

A. We found 49 hydrants connected to the Lonsdale works when we took possession of them.

Q. What were their sizes and capacity?

A. They were all two nozzle hydrants with 4 inch connections.

Q. What was the quality of hydrant that has been put in by your company since 1891 as compared with the quality put in prior to that date?

1429 A. We consider the hydrant we are now using—the Coffin Valve Company make—as good, if not better than any other make.

Q. Is it more or less expensive than the other make of hydrants you have mentioned?

A. It is somewhat more expensive.

Q. How much more?

A. An average of a couple of dollars, I think, other things being equal.

Q. How many of the hydrants that entered into the original construction of the Knoxville Water plant have been taken up and replaced?

A. I don't know exactly which of the hydrants here, found in 1891, were of the original construction.

Q. I refer by original construction, to construction prior to December 1891?

A. There have been none of the hydrants discontinued; as pipe has been laid on adjoining streets and of larger size some have been taken up and reset on same or the opposite corners to get them on the larger sizes of pipe, and in some few instances perhaps, the exact number and location I cannot recall, hydrants have been substituted for others in the same location.

Q. So that practically all, if not all of the hydrants that entered into construction prior to 1891, still remain in the plant?

A. Substantially so, yes sir, except in that portion of the plant lying East of the City in what is known as the Ex-Tenth ward, the hydrants there have been taken up and discontinued entirely, some of them having been set prior to 1891.

Q. How many of those do you know of Mr. Kimball?

1430 A. There have been 15 hydrants altogether taken up in that territory East of the City.

Q. What has been done with them?

A. The hydrants themselves I think are now in stock awaiting further use.

Q. Is the connection embraced in the cost of a hydrant as ordinarily purchased?

A. No sir, the connection consists of the short length of pipe running from the hydrant itself to the main in the street.

Q. Mr. Kimball on page "37" of the deposition of Mr. William Wheeler, being part of the schedule of your estimates of cost of this plant, I find an item reading thus: "Furnishing and setting 17 fire hydrants at $37.00 complete $629.00." Now will you please analyze that item so as to show how much for hydrant, how much for connection and how much for the work of setting &c. so that we may see it in its detail?

A. That is estimated at $32.00 as the cost of the hydrant plus $5.00 for setting same.

Q. Does that include connection?

A. No sir.

Q. Only the naked hydrant?

A. Only the hydrant and the setting of it.

Q. The connection is charged in another item?

A. The connection is charged in the quantity of pipe laid of the size that the connection was, 6 inch if it was 6 inch, or 4 inch, if it was 4 inch.

Q. What style of hydrants were those set at that time?

A. These particular 17?

Q. Yes sir; I mean what make or manufacture?

A. They seem to be all of the Coffin Valve Company's make.

1431 Q. They were of the kind that entered into the original construction of this plant, were they not?

A. They were not.

Q. What was their number of nozzles and capacity?

A. 6 of them were three nozzle; 10 of them were two nozzle, and one of them was one nozzle, and in relation to that last one, I will say that that was of the Chapman Valve Company's make, the remaining 16 being of the Coffin Valve Company make.

Q. I notice among the credits given for the same period on page "38" of the deposition of William Wheeler is "5 hydrants at $27.00, $135.00" what kind of hydrants were those that were taken up. Give their make, manufacture, number of nozzles and capacity?

A. Three of them were of the Chapman Valve Company make, 2 of them were of the Ludlow Valve Company make, three being one nozzle and two, two nozzle hydrants.

Q. They were of the hydrants that entered into the original construction, were they?

A. I presume they were.

Q. Did you give their capacities? That is as to their sized connections?

A. Of the last five hydrants testified to, three of them were of 4 inch connection and 2 were of 6 inch connection.

Q. Passing to the period ending March 31, 1895 on page "48" of

William Wheeler's deposition, being the schedule that you have adopted, I find an item of 9 fire hydrants complete at $37.00, $333.00. Will you give the manufacture, number of nozzles and capacity of these hydrants?

A. Six of them were one nozzle hydrants, three of them were 2 nozzle hydrants; three being of 6 inch connections and 6
1432 being of 4 inch connections; six being of the Ludlow Valve Company's make, two of the Chapman Valve Company's make and one of the Coffin Valve Company's make. And in explanation of this I will state that this is more apparent than real, being simply the resetting of certain hydrants in different locations on account of the replacement of various pipe lines with larger sized mains, and the consequent necessity for relocating and resetting the hydrants, this being charged here as construction and further on credited to their value as taken up, the difference in the debit and credit item in the analysis being substantially the labor involved in the work.

Q. The labor involved in setting them is embraced in the charge of $37.00 each, isn't it?

A. Yes sir.

Q. Now the credit for these 9 fire hydrants found on page "48," they are credited at $27.00 a piece, are they not?

A. Yes sir.

Q. You charge $5.00 for setting the hydrant and $10.00 for taking it up?

A. I think if you will make the subtraction again you will find that the total charge is only $10.00, not $15.00 as you state it.

Q. Well you charge $37.00 and credit $27.00?

A. Yes sir and the difference between $27.00 and $37.00 is $10.00, not $15.00.

COMMISSIONER: You have charged $37.00 and credited $27.00 for each change of location or replacement of the street hydrant. If the value of the hydrant itself is considered $32.00 why is not the difference simply the $5.00 for setting?

A. The difference between the value of the hydrant, $32.00
1433 and the credit of $27.00 is the estimated cost of taking up that hydrant and preparing it for resetting, and this accounts for the other $5.00.

The further taking of this deposition was adjourned until 2 o'clock P. M. January 22, 1903.

THURSDAY, *January* 22, 1903—2 o'clock p. m.

The further cross-examination of FRANK C. KIMBALL resumed.

Q. Mr. Kimball what is the estimated ordinary life of a fire hydrant?

A. I do not know that any definite period can be fixed. It depends very largely on the amount of use to which it is put, the parts of a hydrant which will wear out being the valve, valve seat and the stem which quite frequently is broken, but these are parts which can

be replaced, and replacing them makes the life of a hydrant not exactly interminable but good for 50 to 75 years perhaps.

Q. What is the estimated life of a water plant, taking it as a whole?

A. That also depends upon conditions of use and abuse, but a well constructed, well managed plant should last for 35 to 40 years as an average, and in saying this I have distinctly in mind that some parts of it may be outgrown or worn out at a very short period, possibly 5 to 10 years, while other parts of it might last 50, 75 or 100 years, but taking a plant as a whole, if it is well managed, its average life I think would be from 35 to 40 or 45 years.

Q. What do you estimate the oridnary life of piping to be?

A. The life of cast iron pipe where it does not require to be replaced on account of deficiency in size probably has never been accurately determined, but unless there is some chemical
1434 action taking place from the character of the water or the soil, a piece of cast iron pipe should last perhaps for 75 years more or less.

Q. Of course the buildings and reservoir are as long lived as the pipe are they not?

A. They most assuredly are not.

Q. What is the estimated ordinary life of buildings?

A. Well that depends largely upon whether they can remain as originally constructed or whether from the nature and growth of the service they have to be substantially rebuilt. All these points have to be taken into consideration in determining the life of buildings, but with them taken into consideration it is perhaps fair to state that the average life of buildings in a plant of this character range from 15 to 30 years.

Q. How about reservoirs?

A. An earth reservoir similar to the one here, so far as its physical life is concerned, probably would last a more or less indefinite length of time, but considerations of size and location, particularly as relating to its elevation and the pressure that can be obtained from it taken into consideration would limit the practical and useful life of a reservoir to from 25 to 35, or possibly under some considerations to 40 years.

Q. Mr. Kimball I will ask you to give a statement from the books of the company of the purchases of fire hydrants that have been made, and the price and terms of purchase, with the dates and kind of hydrant, number of nozzles, size of connections, and from whom purchased?

Mr. CALDWELL: I submit to the court that we brought the books here for their expert witnesses to examine for this very purpose.

1435 COMMISSIONER: It is proper for the company, having put these hydrants in, a thing they have purchased in the market, they have put them all in at a certain price,—we will say $32.00,—and we will assume for the moment that is a fair valuation; but at the same time on cross examination he has the right

to know whether they cost $32.00 or whether some cost $34.00 or whether some cost $30.00, or what is the basis of this $32.00. I think it is a question that should be answered.

A. I will furnish such a statement, which is as follows:—

"List of hydrants purchased as shown by Treasurer's Books. Price is f. o. b. factory, freight and drayage to be added unless otherwise noted:—

1892.				
Jan.	11.	Coffin Valve Co...	2 plug hydrants, 6 inch connection with frosts at $25.50	$51.
July	26.		10 improved plug hydrants, 2– 2½ inch nozzles, 6 inch connection at $26.00 / 1½%..	$256.10
			10 improved plug hydrants, 3– 2½ inch nozzles, 6 inch connections at $27.25–1½%..	$268.41
Jan.	1	Wheeler & Parks...	1– 2 nozzle Coffin hydrant, 4 inch connection.....	22.00
1893.				
June	3.	Coffin Valve Co..,	5– 2 nozzle, 6 inch plug hydrants at $28.75.....	$141.25
1896.				
April	1.	William Wheeler..	2– 3 nozzle 6 inch plug hydrants, del'vd at $30.75.....	61.50
			1– 2 nozzle 6 inch plug hydrant 5 feet post delivered..	30.75
Aug.	21.	Coffin Valve Co...	9– 6 inch connection plug hydrants with frosts at $25.00..	225.00
1898.				
May	2.	Coffin Valve Co...	2– 6 inch connection plug hydrants with frosts at $25....	50.00
June	7.	" " " ...	2– 6 inch connection plug hydrants with frosts $25.....	50.00
Dec.	20.	" " " ...	3– 6 inch connection plug hydrants with frosts at $30.50..	91.50
1900.				
March	14.	" " " ...	1– 6 inch connection plug hydrant with frosts.....	33.00

1436 Q. You have explained in your examination in chief what a valve is Mr. Kimball. I will ask you if there are different manufacturers of valves and different qualities of them?

A. There are different makers, yes sir, and presumably different qualities, although a standard valve of any reputable maker is suitable for the purpose for which it is designed, as a rule.

Q. What valve was used in the original construction of this plant and its extensions up to 1891, or if more than one kind what valves were used?

A. We found in the plant in 1891 valves made by the Ludlow Valve Company, I think of Troy, New York, the Chapman Valve

Company whose factory is at Indian Orchard, Massachusetts, also valves of the Coffin Valve Company whose address is Boston, Massachusetts, of the Eddy Valve Company whose address I understand to be Waterford, New York, and numerous stop-cocks, the names of the makers of which do not appear upon them, and whom it would therefore be impossible for me to state.

Q. Can you state how many valves, with their respective sizes, were found in the works of the old system when you came in?

A. That is all stated in the analysis.

Q. Is the statement on pages "32" to "36" of William Wheeler's deposition the one to which you refer?

A. The number of valves as stated on the bottom of page "32" and top of page "33," also at the top of page "34" of William Wheeler's deposition are the number of valves found here by us and listed as of the close of 1891.

Q. Now do you know as a matter of fact Mr. Kimball whether the several kinds of valves used were of the same kind, and were uniform in price or not?

A. I cannot state as to that no sir, except from a general knowledge of the price of valves of these various companies. In
1437 asking for bids on them some times one company would give a considerably lower price, at other times another company would give a lower price, but their prices as a rule run very uniformly.

Q. What of the quality of the several valves you found, were they different or uniform?

A. Well the valves we found here have been doing as good work as could be expected of them, and so far as my knowledge of them goes, there is very little if any choice between them.

Q. Are there any differences in their construction or weight or anything of that sort that would affect the matter of value or price?

A. None that I can recall.

Q. What are the matters that affect their value as regards the same sizes of valves, if there is a difference in values?

A. The considerations would be the same substantially that affect the prices of pipe or other materials; differences in the market value for the time being of the materials that go to make them up and the labor employed in the manufacture of them.

Q. In other words, to be more specific, are all say 12 or 16 inch valves of the same manufacture at the same price, or do they have different qualities of the same size at different prices?

A. As a rule what is known as the Standard Water Works valve would have substantially the same price from the manufacturer, although that might be varied within certain limits in accordance with the size of the order that is placed with them.

Q. Now Mr. Kimball what manufacturer of valve have you used since 1891 in the extension and additional construction of this water plant?

A. We have used valves made by the Coffin Valve Company of Boston, by the Darling Manufacturing Company of Williamsport,

Pennsylvania and I think a few made by the Chapman Valve Company of Indian Orchard, Massachusetts.

1438 Q. Has there been any improvement in the valve since the original construction of this plant?

A. Oh yes sir.

Q. Are the valves that you have used of an improved kind?

A. We consider them so, yes sir.

Q. Who made the purchase of valves for your company, Mr. Kimball?

A. Since I have been Superintendent the contract for them has usually been made by the Treasurer, and orders sent either through him or direct from this office from time to time as they were required.

Q. Can you furnish a statement of the purchases of valves made by your company such as I have asked in regard to fire hydrants from your office?

A. I can furnish such information as the Treasurer's books and vouchers show. I wouldn't undertake to interpret his books too far in the matter.

Q. What do you mean? Are the books not kept so as to show exactly what was paid for them?

A. I think they are, but until I examine them with this matter in view I cannot say positively.

Q. If there were any discounts on these purchases, would they appear on the books you have in your possession?

A. I presume they would; whether I will be able, not being familiar with the books, to get at all the points in connection with these purchases, I cannot state until I examin- them.

Q. Well if it appears on the books that there are discounts, or if you have personal knowledge of such facts, I will ask you to state that?

A. Such transcripts as I shall furnish from the books will be correct so far as my judgment is able to determine.

Mr. CALDWELL: I feel compelled to except to that question. Information from the Treasurer's books is asked, the Treasurer

1439 is not here, but the books are here and open to examination by the expert witnesses that we understand the city was going to put on. I don't think it is fair to this witness to ask him to make statements from the Treasurer's books.

Mr. PICKLE: Then I should most certainly have required Mr. Elbert Wheeler to have given the information had it not been that he was hurried to get away and stated that the books would be accessible.

COMMISSIONER: The exception is over-ruled.

1440 The following gives a list of gates purchased, as shown by the Treasurer's Books.

Price given is f. o. b. factory, freight and drayage to be added unless otherwise noted.

1892.								
Feb.	17.	Coffin Valve Co.,	6	4-inch	gates at	$8.00.....	$48.00	
July	26.		5	12-inch	gates "	35.00.....	175 00	1½%
			2	10-inch	" "	28.00.....	56.00	1½%
			1	6 "	" "	.....	12.00	1½%
Nov.	19.		1	10 "	" "	.....	28.00	1½%
Dec.	6.		2	6 "	" "	12.00.....	24.00	
"	1.		1	6 "	" "	.....	12.00	
			1	4 "	" "	.....	8.00	
Jan.	3.		2	6 "	" "	12.00.....	24.00	
Feb.	26.	Chapman Valve Co.,	12	2 "	Service Valves at $3.13 net.....		37.56	
Jan.	1.	Wheeler & Parks,	1	4-inch	Coffin Gate.....		8.00	
July	1.		1	6 "	" "	.....	12.00	
Oct.	1.		1	8 "	" "	.....	20.00	
Aug.	22,		1	6 "	" "	.....	12.00	
1893.								
April	1.	Coffin Valve Co ,	1	12 "	Gate.....		35.00	
			2	10 "	" at $28.....		56.00	
			1	8 "	"		18.00	
			1	6 "	"		12.00	
May	3.		1	18 "	"		95.00	
			2	16 "	" " $65.....		160.00	
May	27.		13	6 "	" " 12.....		156.00	1½%
			4	8 "	" " 18.....		72.00	1½%
June	30.		2	16 "	" " 65.....		130.00	
Aug.	8.		15	3 "	" " 6.....		90.00	
Dec.	19.		2	6 "	" " 12.....		24.00	
May	8.	Chapman Valve Co.,	3	2 "	service valves at $3.13.....		9.39	
April	29.	Wheeler & Parks,	1	6 "	Coffin Gate.....		12.83	
			1	4 "	" "		8.44	
			1	2 "	Chapman "		3.30	
			(These last three gates delivered.)					
1894.								
Oct.	12.	Chapman Valve Co.,	12	2-inch	service valves at $3.13.....		37.56	
Aug.	10.	William Wheeler,	1	4-inch	gate, delivered		8.75	(Coffin)
			1	10 "	" "		32.00	"
			1	4 "	" "		8.50	(Chapman)
			1	12 "	" "		32.00	"
			3	6 "	" " at 13.10		39.30	(Coffin)
			1	8 "	" "		18.65	"
Sept.	28.		1	4 "	" "		8.75	"
Oct.	1.		3	6 "	" " at 13.10		39.30	"
			2	4 "	" " 9.19		19.38	(Ludlow)
Nov.	8.		1	4 "	"		9.19	(Coffin)
Dec.	4.		1	6 "	"		13.10	(Chapman)
			1	6 "	"		13.10	(Coffin)
Oct.	1.		1	6 "	"		13.10	"
1895.								
Sept.	6.	Coffin Valve Co.,	3	6 "	" at 12.00.....		36.00	
			1	10 "	" "		26.50	

1441

1896.							
Feb.	16.	William Wheeler,	1	6-inch	Coffin Gate Dely'd..		$13.00
April	1.		1	12 "	" " " " ..		35.50
			1	8 "	" " " ..		18.75
			3	4 "	Ludlow " " ..		24.75
			6	3 "	Coffin " " ..		39.00
May	4.	Coffin Valve Co.,	3	6 "	Gates, at $12.00.....		36.00
June	29.	" " "	1	8 "	"		18.00
			2	6 "	" " 12.00.....		24.00
Sept.	10.		2	4 "	" " 8.00.....		16.00
Oct.	2.		3	6 "	" " 12.00.....		36.00

1897.							
June	28.		2	3 "	" "	at 6.	12.00
July	8.		1	8 "	"	.....	17.50
			1	3 "	"	.....	6.00
Sept.	15.		3	3 "	" "	6.00.....	18.00
			1	6-inch gate		.....	11.50
Nov.	4.		1	6 "	"	.....	11.50
1898.							
March	14.		2	3 "	" "	6.00.....	12.00
			2	4 "	" "	7 50.....	15.00
May	24.		2	6 "	" "	11.50.....	23.00
			2	3 "	" "	6 50.....	11.50
June	16.		2	6 "	" "	11.50.....	23.00
			3	3 "	" "	5.50.....	16.50
July	8.		2	3 "	" "	5.50.....	11.00
	25.		3	3 "	" "	5.50.....	16.50
Aug.	11.		2	4 "	" "	7.50.....	15.00
Oct.	6.		2	3 "	" "	5.50.....	11.00
1899.							
Jan.	23.		2	6 "	" "	11.50.....	23.00
Feb.	28.		2	6 "	" "	11.00.....	22.00
April	15.		2	6 "	" "	11.50.....	23.00
	18.		1	8 "	" "	.....	17.50
	21.		2	3 "	" "	5.50.....	11.00
	22.		2	4 "	" "	7.50.....	15.00
			2	8 "	" "	17.50.....	35.00
June	7.		3	6 "	" "	11.50.....	34.50
July	11.		2	4 "	" "	7.50.....	15.00
			1	6 "	" "	.....	11.50
			1	8 "	" "	.....	17.75
July	14.		1	10 "	" "	.....	24.00
	19.		5	3 "	" "	6.00.....	30.00
			2	12 "	" "	30.00.....	60.00
Aug.	16.		1	3 "	" "	.....	6.00
			1	6 "	" "	.....	11.50
Sept.	2.		1	6 "	" "	.....	11.50
	15.		2	8 "	" "	18.70.....	37.40
			1	3 "	" "	.....	6.15
	21.		1	6 "	" "	.....	12.35
			1	8 "	" "	.....	18.70
Oct.	12.		1	8 "	" "	.....	18.70
			2	6 "	" "	12.35.....	24.70
			1	3 "	" "	.....	6.15
Nov.	7.		2	6 "	" "	12.35.....	24.70
Dec.	13.		3	8 "	" "	18.70.....	56.10
			1	6 "	" "	.....	12.35
	20.		1	6 "	" "	.....	12.35

1900.							
Feb.	12.	Coffin Valve Co.,	2	6-inch gates,		at 12.35.....	$24.70
	28.		2	3 "	" "	6.15.....	12.30
Mar.	2.		1	3 "	" "	.....	6.15
April	12.		2	3 "	" "	5.90.....	11.80
			2	6 "	" "	11.75.....	23.50
	23.		2	6 "	" "	11.75.....	23.50
June	13.		3	3 "	" "	5.90.....	17.70
July	11.		3	3 "	" "	5.75.....	17.25
			1	12 "	" "	.....	31.70
			2	6 "	" "	11.45.....	22.90
			1	10 "	" "	.....	25.75
	24.		1	14 "	" "	.....	50.35
Sept.	12.		3	4 "	" "	7.70.....	23.10
			1	6 "	" "	.....	11.45
			1	8 "	" "	.....	17.50
Oct.	3.		2	6 "	" "	11.45.....	22.90
			3	4 "	" "	7.70.....	23.10

	13.		1	20	"	.....	112.00
			1	8	"	.....	17.50
	22.		1	14	"	.....	53.45
Dec.	11.		2	3	"	5.75.....	11.50
			3	6	"	11.45.....	34.35
			1	8	"	.....	17.50
	18.		1	4	"	.....	8.75
	21.		2	6	"	11.75.....	23.50
1901.							
June	3.		2	4-inch gates at		7.70.....	15.40
May	8.		2	12	"	31.70.....	63.40
			2	6	"	11.45.....	22.90
April	20.		3	6	"	11.45.....	34.35
	9.		3	4	"	7.70.....	23.10
March	30.		3	3	"	5.75.....	17.25
July	26.		1	12	"	.....	31.70
			1	8	"	.....	17.50
			8	6	"	11.45.....	91.60
Aug.	3.		1	8	"	.....	17.50
Sept.	4.		1	12	"	.....	31.70
			1	8	"	.....	17.50
			2	3	"	5.75.....	11.50
	11.		2	12	"	31.70.....	63.40
	18.		2	3	"	5.75.....	11.50
Nov.	4.	Darling Mfg. Co.,	2	6	"	10.00.....	20.00
			2	8	"	15.00.....	30.00
Dec.	27.		2	3	"	5.00.....	10.00
			2	4	"	6.00.....	12.00
			3	6	"	10.00.....	30.00
1902.							
March	15.		2	3	"	5.00.....	10.00
			2	6	"	10.00.....	20.00
			2	8	"	15.00.....	30.00
			2	10	"	21.00.....	42.00
April	24.		3	3	"	5.00.....	15.00
May	16.		1	6	"	.....	11.75
			2	4	"	7.24.....	14.48
	19.		3	3	"	5.00.....	15.00
			4	6	"	10.00.....	40.00
May	19.		2	8	"	15.00.....	30.00
Aug.	21.		3	6	"	10.00.....	30.00
			1	6	"	11.76.....	11.76

1443 Q. I notice a charge for valve boxes. What are those, Mr. Kimball; will you explain for the benefit of us that do not know?

A. Valve boxes, in the main, are cast iron cylindrical boxes which are placed vertically over the stem of the gates with a heavy cover, used for the purpose of gaining access to the gate so that the stem can be operated when necessity compels.

Q. Is it metal or brick?

A. As I stated, it is cast iron in nearly all cases.

Q. Is it furnished with the valve?

A. No sir, it is an independent contrivance.

Q. Are they of the same size for all sizes of valves?

A. No, sir they are of varying sizes dependent more particularly upon the depth that the stem of the valve is below the surface.

Q. What do your books show to be the actual cost of these boxes during the several years; the lowest and highest prices paid during any year, if different prices have been paid.

A. I find the following abstracts from the Treasurer's books as regards the price of cast iron gate boxes:—
Prices are for each box f. o. b. Knoxville.

1892:—$2.45; $2.60; $2.85; $2.78; $3.18; $3.35; $3.60. $4.50
1893:—$2.60; $3.00; $3.45; $3.20
1894:—$2.80; $3.15; $3.25; $3.35; $3.40
1896:—$2.45; $3.00; $3.20; $3.25; $3.40
1897:—$2.45
1898:—$2.45
1899:—$2.45; $2.89
1900:—$2.89
1901:—$2.75
1902:—$2.60

Q. Mr. Kimball, you stated in your examination in chief in very general terms that the cost of ⅝ inch meters was $10. Wasn't that an inadvertent statement as applied to all kinds of meters that have been used in the construction of this plant?

A. The statement was made more particularly with reference to by far the largest part of the meters which had been installed in connection with this plant.

Q. I will ask you to examine a schedule made part of the deposition of Mr. Elbert Wheeler in which he undertakes to set
1444 out the purchases of meters made by this company since 1891 with their prices and discounts, and state whether it was made out under your supervision, and whether it is correct as shown by the books, being Exhibit number "5" to the deposition of Elbert Wheeler?

A. I assisted the Treasurer in transcribing this from his books, and from the best of my knowledge and belief, it is correct.

Q. The meters that were used in the construction of this plant are the ones that are found in this Exhibit "5," are they not?

A. They are I think.

Q. They range in price from 1893 up to 1901 from $8.40 to $10.00 with 10% off do they not, according to this statement?

A. You are referring now to the ½ inch or 5/8 inch size?

Q. Yes sir.

A. That appears to be the fact yes sir, but the larger part of these however to an extent of at least 90% are of the latter price apparently, although I find by a further examination of this Exhibit that quite a number of the 5/8 inch meters cost $11.50 minus 10%, these prices being without connections however.

Q. As to what make of meters without connections?

A. The last that we have been referring to, those invoiced at $10.00 and $11.50 minus 10% in each case.

Q. Now the others were $8.40 with the connections included, were they not?

A. While this Exhibit does not so state, it is my impression that the meters listed at $8.40 do include connections.

Q. While on that subject Mr. Kimball, when did you begin to use the heavier metal tops for meter boxes?

A. You mean of the kind that we are now using?

Q. Yes sir.

A. I think in 1895 or thereabouts.

1445 Q. Will you examine your books and state what you paid in the respective years without going into a full list of your purchases, stating the highest and lowest prices paid for these metal tops in each year?

A. An abstract from the Treasurer's books shows the following as the prices paid for the metal or cast iron tops of the meter boxes each year from 1899 to 1902:

1899 .....$3.19; $3.21; $3.29; $3.31; $3.37.
1900 .....$3.16; $3.17; $3.26; $3.33.
1901 .....$2.63; $2.81; $3.02; $3.14; $3.15; $3.18; $3.32.
1902 .....$2.65; $2.95; $3.05.

Q. What is the cost of installing a 2 inch meter Mr. Kimball?

A. In addition to the meter and the price of the box, it is simply the labor required in cutting out the pipe, excavating for the box, setting the box and refilling, threading the pipe, connecting the meter and furnishing such fittings as may be necessary to connect that meter the price of which would vary according to location, but would amount to, in addition to the meter and box, from $3.00 to $6.00.

Q. About what is the cost of installing the 4 inch meter?

A. A 4 inch meter requires quite expensive connections including gate and check valve, and also requires in place of the ordinary box used over the smaller meters, for good construction a brick well, with a somewhat heavier and decidedly larger cast iron top so as to allow the meter being taken out for repairs, if necessary, and these fittings, the labor involved in cutting in a 4 inch meter, brick well, and the settting of it would cost from $50.00 to $75.00, and might in places amount to $100.00, all this in addition to the meter itself.

1446 Q. In regard to gates, what make or manufacture has been used in the construction and extension of this plant, Mr. Kimball?

A. I have just testified to that General.

Q. Under the head of valves, is that the same thing?

A. The same thing.

Q. The same explanation applies?

A. The name gate and valve is used indiscriminately, meaning the same thing.

Q. Do they mean precisely the same thing?

A. In our wording of it, yes sir.

Q. At any rate they have been used in the same sense in the evidence?

A. In the same sense exactly, the more common designation of them being "gate valve."

Q. In the charges for concrete flooring, what is the ordinary thickness of the flooring referred to in your estimates Mr. Kimball?

A. In what particular work have you reference to?

Q. Now there are different kinds and I didn't know but what you would be able to remember. It does not appear always what thickness of concrete flooring is referred to?

A. Concrete flooring is made of varying thicknesses dependent upon the position it is placed in and the kind of work that is to be carried on over it. It ranges in our work from 3 inches to 8 inches in thickness.

Q. Where did you do the 8 inch, at the intake tower?

A. In some portions of the settling basins at the filter plant.

Q. Since you have mentioned the filter plant, who superintended the putting of that in?

A. I was constructing engineer at the time it was put in.

Q. Who put the filters in?

A. I believe the filters were furnished by a concern known as the Cumberland Manufacturing Company with headquarters at that time in Boston.

1447 Q. Did they have a man here superintending putting them in and testing their sufficiency and capacity?

A. They had several mechanics here and I think that after the plant was erected and ready for use one of their men came down here to see that everything was all right and to instruct us, more particularly the men who were to have the charge of the operation of it in its workings so that the best results could be obtained.

Q. What did they have the several mechanics here for which you speak about?

A. For the purpose of erecting the plant.

Q. Putting it in place?

A. Doing all work necessary to get it in proper operation.

Q. How was it about the engines and pump, &c; did the manufacturers have men here to look after the installing of them?

A. That depends on what particular ones you mean. The larger part of them have been erected by the water Company's men themselves under my direction and so far as I now recall only one piece of machinery has been erected by the manufacturers furnishing the same.

Q. What was that?

A. That was the vertical pump at the river station which was erected in 1895.

Q. Well in regard to the other machinery, didn't the manufacturers have a man here to see to putting it in place and starting it?

A. They did not. All the rest of the machinery that has been put in place since 1891 with the exception above noted has been erected by the water company's employés under my direct personal supervision.

Q. You superintended it in person?

A. I did.

Q. Mr. William Wheeler wasn't here?

A. He was here more or less of the time.

Q. How much of the time?

1448 A. In days I cannot state. He was here a sufficient amount of the time to see that his plans and instructions were being carried out.

Q. But I mean at the time of the putting in place of this machinery, was he here?

A. He was here a sufficient length of time to see that his plans and instructions were carried out.

Q. Well you were competent to do it without his assistance, wer-n't you?

A. That is entirely a question of opinion.

Q. Well do you remember a single occasion where he put in any particular piece of machinery or personally superintended it?

A. Where he performed the manual labor?

Q. No sir; where he was present and superintended it?

A. His directions very largely were followed in all of that work.

Q. That doesn't answer my question. Were those instructions given by letter chiefly?

A. Directions have been given by letter and directions have been given by him personally on the ground.

Q. Now I will ask you again, was he present and personally superintended the putting in of any piece of that machinery?

A. I have answered that to the best of my ability.

Q. From whom did you purchase such things as window frames and door sills that were used in the construction of buildings that were erected, any extensions or replacements in this plant since 1891?

A. They have been purchased of various parties in town, all of them locally. The Craig Lumber Company as it was in 1894 and 1895 I believe furnished those at the filter plant and the pumping station work done at that time. I think D. M. Rose & Company furnished some for us in 1900 and 1901 as did also T. M. Michaels.

Q. On page "75" of William Wheeler's deposition I find

1449 an item for wire fence around the reservoir basin, labor $35.00 material $70.00. Was $70.00 the amount you actually paid for the wire or is that an estimate?

A. That is an estimate.

Q. From whom did you buy the wire?

A. That was erected by my predecessor Mr. Hague, or under his supervision and I am unable to state from whom it was purchased.

Q. Do the books of the company show how much was paid for this wire?

A. They may, presumably do.

Q. Have you such books in your possession?

A. I have the Treasurer's books at the office of the company.

Q. I wish you would look and see if it shows what was paid for it?

A. It will necessitate looking through the entire book for a year at least, as I haven't even the slightest clew as to the name of the seller to help me in the search. I can do it if it is necessary, taking into consideration the time it will involve.

Mr. CALDWELL: I believe we will except to that question.

COMMISSIONER: I will sustain the exception, for if it is too high it can be easily proven.

Q. Is the fence still standing?

A. It is.

Q. On page "82" of William Wheeler's deposition I find an item "furnishing and attaching lightning-rod to chimney $50.00 with 20% added, $10.00. By whom was that done?

A. That was done by the Knoxville Water Company under my supervision.

Q. What was the actual cost of the lightning-rod?

A. I couldn't tell you sir.

Q. Was that an estimate also?

A. Everything in this analysis is an estimate.

Q. The books would show precisely what it cost, wouldn't they?

A. The books would undoubtedly if the item can be found
1450 from amongst the mass of items in the book, that is, show what the copper rod itself cost. I have doubts about its showing the labor cost separate from other work.

Q. Turn to page "84" of William Wheeler's deposition. Do you know what was the cost of the Lonsdale-Beaumont Water Company of the 14 acre Tillery lot at $1,000.00 on that page?

A. I have seen it stated in a deed of certain parties to the Lonsdale-Beaumont Water Company the price for that 14 acres which was between $5,000.00 and $6,000.00 I think.

Q. That tract lies wholly outside the city and has been abandoned for use by the water company, hasn't it?

A. It has never been used by the water company as a source of supply.

Q. It was part of the properties of the Lonsdale-Beaumont Water Company wasn't it?

A. It was.

Q. Well now take the pump station lot on Middlebrook road and Third Creek of one and one-third acres, $1,000.00 on the same page. Is that still in use by the wat-r company?

A. It is not, no sir.

Q. What was the cost to the Lonsdale-Beaumont Water Company of that?

A. I do not know exactly but I have seen the original deed of conveyance and it is my impression, although I will not be sure about it, that the consideration was as stated here $1,000.00. I am very likely however to be mistaken in that although that is my best impression now.

Q. As to the rights-of-way on the same page; purchased of M. D. Swan, Susan J. Scruggs, William B. May and others $500.00, and water right from M. D. Swan, $500.00. Do you know what the original cost of those were to the Lonsdale-Beaumont Water Company?

A. The water rights of M. D. Swan for $500.00 was a
1451 judgment of the court in his favor and against the Water Company, if I recollect correctly, while the other item, I

cannot state exactly how it was arrived at, but I think through information given at various times by various parties, and an estimate on the ground of what probably was a fair price to charge for these rights-of-way.

Q. Who made that estimate?

A. It was made by Mr. William Wheeler and myself.

Q. Do you know what that cost to the Lonsdale Water Company was?

A. Not of that item, no sir, not exactly.

Q. Was it more or less than your estimate?

A. I have answered that to the best of my ability.

Q. These water rights and rights-of-way have been abandoned also?

A. They have, yes sir.

Q. Now if you undertake to estimate the useful part of this plant and the part that is not useful by percentages on original cost, ought not those outside properties have gone in like the others at their actual cost to the Lonsdale Beaumont Water Company?

A. I do not quite grasp your question, General. I cannot understand your question, and therefore cannot give you a definite answer.

Q. Well now look to the same page of Mr. William Wheeler's deposition about which I have inquired; I find stand-pipe lot Beaumont Addition $600.00; what was the actual cost of that lot to the Beaumont Water Company?

A. I cannot state as to that any more than I can give definite statements as to the other costs of these pieces of real estate, all of them being estimates and not cost prices.

1452 Q. Isn't it your understanding that that $600.00 is the actual cost of that stand-pipe lot?

A. I think quite probably it closely approximates that; I have no means at hand of verifying it.

Q. The Company still retains that stand-pipe for present use, doesn't it?

A. It does.

Q. What is the size of that stand-pipe lot Mr. Kimball?

A. I cannot state from memory; my best judgment would be that it is something like 100 feet perhaps by about 200 feet, although it may be 50 per cent. larger or smaller than that.

Q. It is a solid rock isn't it—the bed of a creek—the face of it is a solid rock?

A. The stand-pipe lot is on top of Beaumont ridge and the stand-pipe is located on it.

Q. Well it is the reservoir site that I refer to, isn't it?

A. Ask me again please.

Q. Do you mean that the company owns just that much territory where the stand-pipe is situated?

A. They own a lot of land on Beaumont ridge on which the stand-pipe is located, but what the size of that lot is, I am unable to state.

Q. Well is it several acres?

A. I should think it was somewhere in the neighborhood of 100

to 200 feet, but it may vary 50 per cent. one way or the other from that.

Q. And that is the tract that is valued here at $600.00?

A. Yes sir.

Q. Without considering the stand-pipe at all?

A. Without taking into account the stand-pipe.

Q. How far is that tract from the city of Knoxville?

1453 A. From what part of the city?

Q. Well say from the corporate limits?

A. Possibly ¾ of a mile.

Q. And how far from the court-house?

A. Two miles or two miles and a half.

Q. And about the same distance from your works here in the city, is it not?

A. Well that depends whether you measure it in an air line or in some other way.

Q. Well measure it and state the method of your measurement?

A. I have no means of measuring it here, sir.

Q. How is it surrounded, is it an open country district or is it a part of the city where this is situated—I mean is it thickly populated or not out there?

A. There are no houses there close to the stand-pipe the nearest one perhaps being a quarter of a mile or so away.

Q. What is the length of the line of pipe from that standpipe into West Knoxville?

A. Into what part of West Knoxville?

Q. Well say Fort Sanders, about the center of Fort Sanders?

A. From the stand-pipe on Lonsdale Ridge to the junction of Sanders Avenue or 9th Street and Laurel Avenue as the pipe runs is about 9775 feet.

Q. What size pipe covers that distance?

A. Twelve inch the entire length.

Q. As a matter of original construction, would you place that stand-pipe at that distance from the City of Knoxville?

A. That is a question that is very hard to answer without taking into consideration all the circumstances, all the property to

1454 be supplied, the elevations of the various points and the availability of them; under some circumstances, yes.

Q. But under the conditions as existing, what do you say?

A. Under conditions as they are now and have been, I can see no other way out of it.

Q. How far is it from the stand-pipe before you reach any inhabited portion that you supply water?

A. We take a branch off of the stand-pipe line within 60 feet of the stand-pipe.

Q. How much water does that supply—how many families?

A. It only supplies, so far as families go, I think two or three, but it does supply at times the Southern Railway shops at Lonsdale.

Q. Then how far is it before you take any more water from it?

A. Well without the plans before me, I cannot say definitely, but I think the next branch comes off within 600 or 1000 feet.

Q. How many families does that supply?

A. That is a question entirely beyond my ability to answer, as it runs into North Knoxville through the entire territory there and connects with mains of the company coming from other directions, while another branch near the same point runs in a westerly direction and supplies a large number of people, factories, &c. in and around the Clinton pike and the Proctor Addition.

Q. You have not made any extensions of your lines into the country in other directions, have you?

A. If you will define your meaning of "country" I will try and answer your question. We have extended our pipes in nearly
1455 all directions except south, where the *the* river cuts us off.

Q. But outside the city proper, you haven't done so have you?

A. We have, yes sir.

Q. Where?

A. We have extended up the Dandridge pike some considerable distance; we have extended out to the North of the City on Central Avenue; we have extended out Northeast of the City in the vicinity of Knoxville Saw Mill Company's property, and some extensions in other places in the Ex-Tenth Ward; this in addition to extensions Northwest of the City in the Proctor Addition heretofore testified to, and extensions west about the Cotton Mills, out the Kingston pike and down to the Tennessee Producers Marble Mills.

Q. But none of those extensions go to the distance that this water pipe is from your plant, do they, or more than half the distance?

A. I cannot exactly grasp the meaning of your question as to the distance from our water plant. If you mean the distance that the West Knoxville stand-pipe is from the pumping station, our pipe extends even to a longer distance in other directions.

Q. Beyond the inhabited portion of the City?

A. We don't consider that portion of the City uninhabited, as we supply parties on the other side of the town from that stand-pipe.

Q. Do you say that there is business out there, if your stand-pipe hadn't been there, that would have induced you to have extended your mains out to that point?

A. Undoubtedly; it might not have been to that particular point, but it would have been to the territory contiguous to that.

Q. What is the particular inducement to have that stand-
1456 pipe at that particular point and not nearer the city?

A. To furnish a proper supply of water and pressure to our customers, not only in that vicinity, but to serve as a storage to certain portions of West Knoxville and to furnish pressure to the hydrants in West Knoxville as required by our contract with the city.

Q. Was it the elevation?

A. Principally.

Q. Then elevation is an advantage isn't it?

A. Decidedly where pressure is concerned.

Q. It saves the building of the heighth of the stand-pipe?

A. The higher the elevation of the ground itself, except for storage, the less height you have to have in a stand-pipe.

Q. Mr. Kimball, when you came here in 1891 the old city of Knoxville was supplied with water from the reservoir by gravity wasn't it?

A. It was.

Q. And that was in accordance with the water company's contract with the old city, wasn't it, and the fulfillment of that contract?

A. As I understand it, yes sir.

Q. There was no stand-pipe and no high pressure at that time was there?

A. There was not.

Q. I believe you have stated that the high pressure and stand-pipe were built in order to comply with the contract that Wheeler & Parks had made with North Knoxville and which the Knoxville Water Company assumed by the same arrangement?

A. That was the original or primary idea I believe of building the stand-pipe.

Q. And putting in the high pressure system, wasn't it?

A. That goes with it, yes sir.

Q. What was the cost of instituting that stand-pipe of high pressure system?

1457 A. The estimated cost is set out in our analysis.

Q. Will you help me to refer to it Mr. Kimball, as you know the year better than I do?

The further taking of this deposition was adjourned until Friday morning, January 23, 1903, at 9 o'clock a. m.

FRIDAY MORNING—9 o'clock a. m.

The further cross-examination of the witness was resumed.

A. In answer to the last question propounded yesterday afternoon, you will find the item of Stand-Pipe Construction on Reservoir Hill set out on page "45" of William Wheeler's deposition. According to this analysis, the aggregate cost including the 20% allowances, is $13,505.89.

Q. Was there any expense attached incidental to the institution of this high service except this stand-pipe?

A. Certain lines of mains were laid which are used both for high service and distribution.

Q. What mains were laid as incident to the institution of that service?

A. Do you mean wholly as relating to the high service?

Q. Necessary to its institution?

A. The mains which were laid as absolutely necessary to the high service, cannot be separated from mains laid for distribution purposes, as all mains used for the high service are also used for distribution and the supply of hydrants, &c. In addition to the cost of the stand-pipe as mentioned above, there is another item on page "505" of William Wheeler's deposition referring to the raising of the stand-pipe at an additional expense of $4,308.40.

Q. Give the dates of the two items for stand-pipe will you?

A. The first item mentioned was for construction for year
1458 ending March 31, 1894, and the second construction was in the period between April 1st and September 30th, 1902.

Q. Now I will ask you if certain larger mains were not put in as incident to the institution of this high service, especially between the reservoir or stand-pipe and North Knoxville?

A. I do not think any mains were laid on account of the high service of any larger size than would be necessary for service from the reservoir or from any other source from which the water might be taken.

Q. What mains were put in at the time this high service was instituted?

A. There were mains laid all over the city some of which have been used for high service, some for the low service and this at different times, meaning by that, that what might be called the route of the high service has been changed from time to time as the emergencies of the business have demanded, so that it is not possible for me to state just what lines are included in the so called high service to the exclusion of their use for general distribution.

Q. Now did it not require a greater pumping power to accommodate the high service than it did the low service.

A. All water pumped into the stand-pipe is pumped the second time, being taken from the reservoir and filters for this purpose, and is done independent of the pumping at the river station.

Q. Well answer the question; did it take greater pumping power to accommodate the high service than the low service?

A. I think I have answered that.

Q. To how much greater elevation did you have to pump the water to accommodate the high service than the low service?

A. Before the stand-pipe was raised, to pump it full re-
1459 quired 83 feet more head; since it has been raised 20 feet more.

Q. About the time this high service was instituted, the old pumping machinery and engines were substituted for new ones, were they not?

A. At what place?

Q. At any place that it may have been done?

A. In 1895, one year or thereabouts after the stand-pipe had been built, a new pump was installed at the river pumping station for the general service of the town, the old pumps, or Davidson pumps as they are known, still remaining in the service as auxiliaries and were not removed until 1900.

Q. Now how do you fill the stand-pipe from the reservoir or river?

A. As I have just testified, the stand-pipe is filled from a pump which secures the water from the filter plant or reservoir on the hill.

Q. Now that machinery was instituted in connection with the high pressure, wasn't it?

A. It certainly was, of necessity.

Q. Now is it in this estimate of $13,505.89?

A. No sir.

Q. What is the cost of that machinery?

A. That is also set out in the deposition of Mr. William Wheeler in detail on the last half of page "44" under item "B," and the last half of page "54" under item "B" carried over and including the first half of page "55."

Q. Aggregating what Mr. Kimball?

A. Also the item on page "70" under No. "9." The aggregates are all set out in the deposition of Mr. William Wheeler in his summary on pages "21" and "22," and also the additions on page "506" of William Wheeler's deposition.

Q. Will you give those aggregates and the dates of each?

A. I can perform the calculation for you, if necessary, but they are all set out here.

1460 Q. Don't each page show the aggregate and its date?

A. They do, and those have been given, I think.

Q. Well it would not take you but a moment Mr. Kimball?

A. On the last half of page "44" of William Wheeler's deposition, under additions made during the year ending March 31, 1894, the item relating to pumping machinery and appurtenances (meaning thereby the high service pumping machinery) is an item of $1,008.00. On the last half of page "54" and the first half of page "55" of William Wheeler's deposition, under additions made during the year ending March 31, 1895, there is an amount of $4,348.98 and an additional amount of $360.00 appertaining to the high service pumping machinery. On page "70" of William Wheeler's deposition, in the additions made during the year ending March 31, 1897, there is a sum of $1,230.00 appertaining to the high service pumping machinery, all of which aggregates are set out on pages "21," "22" and "506" of William Wheeler's deposition.

Q. Now Mr. Kimball, were there any other expenses except those that you have given for stand-pipe and this machinery last stated incident to the installation of the high service; if so state what they were?

A. As before stated, direct expense connected with the high service, so far as it relates to distribution pipes, cannot be separated, if in fact there is any additional expense over and above what would be required for the proper distribution of water. For the purpose of housing the high service pumping machinery, a portion of the filter plant building is used, but what proportion would be charged to this account alone, it is extremely difficult to determine as in fact some of the boiler capacity included in the before-mentioned items is used for the operation of the filter plant as well as

1461 for the high service pumps, and the services are so intermingled that it is very difficult indeed to separate one part of the service from the other.

Q. Well what would you estimate as an equitable distribution of the cost of the buildings between the filter plant and the high service?

A. I have just testified that it would be almost impossible to give

an adequate division on account of the common uses which the buildings are put to.

Q. And the same is true, I believe you say of the additional pipes?

A. The statement I made as regards the pipes was that I can see no reason why any difference in size should be made to insure proper distribution, whether the water is taken from the stand-pipe or the reservoir.

Q. Now, Mr. Kimball the city of Knoxville had been supplied with water from the date of the institution of the plant in 1884 or 1885 until this stand-pipe was built in 1894 and pressure instituted in 1894 by means of a reservoir and gravity lines, had it not?

A. It had been supplied by means of a reservoir, with Tennessee river water unfiltered and without the stand-pipe.

Q. Well it was distributed by gravity, wasn't it?

A. As it is now, yes sir.

Q. And that was true of whatever services it had in North Knoxville and in West Knoxville up to that time, was it not-

A. Up to the date the stand-pipe service was put into operation, it is.

Q. Now the contract between the old city of Knoxville and the water company has never been changed so as to require high pressure for the old city, has it?

A. The contract obligations themselves to date I believe have not, although not only has inquiry been made on that sub-
1462 ject, but we have every reason to believe that the city officials have ordered the high service into the old city without the contract.

Q. Don't tell anything you don't know for if you do I will ask you to produce the evidence. Hasn't the city of Knoxville refused more than once upon the solicitation of the Water Company to accept high service for the old city of Knoxville?

A. To the best of my recollection the Water Company has never solicited the city to accept high service in the old city, but they have had repeated inquiries from the city officials as to what terms and conditions they would supply it to the city.

Q. But the city has never entered into any agreement to take the high service; in fact high service is not taken at this time?

A. High service is furnished to a part of the old city by the Water Company outside of the actual contract requirements as they furnish filtered water outside of those requirements, but not to my knowledge under any agreement with the city for it in the nature of a contract.

Q. Well now you say high service is furnished to the old city; where and how?

A. It is furnished to portions of Reservoir Hill.

Q. How many families do you supply under high service on Reservoir Hill?

A. I cannot answer that question.

Q. Very few, isn't it?

A. Oh several hundred I should judge. As I say our books are

not kept with reference to those matters, so it would be impossible almost except by a house to house canvass, to tell.

1463 Q. That is by a contract with the customers?

A. There is no contract with customers in regard to it whatever, so far as high service is concerned.

Q. And no contract with the city?

A. That I have already testified to.

Q. When the Knoxville Water Company assumed the obligations of Wheeler & Parks' contract, with North Knoxville to supply all parts of that city including fire hydrants with water, it was unable to do it by the gravity lines and from the reservoir, wasn't it?

A. The contract with North Knoxville provided that within a certain time a high service system should be established, and it was in the fulfillment of this contract that this work was primarily done.

Q. That contract was made without consultation with the city of Knoxville and without their knowledge wasn't it?

A. I have no knowledge as to what the city of Knoxville knew about it; I have no knowledge as to whether they had anything to do with it or not, not having had anything to do myself with the making of that contract.

Q. How much of North Knoxville under that contract could not be supplied with the gravity lines, and required high service-

A. The higher portion of it around what is now Glenwood Avenue, Scott street, &c.

Q. Mr. Kimball on page "505" of William Wheeler's deposition under the head of "stand-pipe," the item reads "raising standpipe 20 feet higher upon new masonry substructure,—original estimate of cost, including engineering, contractor's allowances, &c., $4,244.40." "Add for 1,600 lbs. steel rods at 4 cents gross $64.00 total $4,308.40. I wish you would furnish the items that make up this lumping estimate so its accuracy can be in some way tested?

A. The items making up this estimate are as follows:

1464 *Approximate Estimate of Cost of Elevating Standpipe.*

20 M Brick, face, at $12.50	$250.00
100 M " rough " 6.50	650.00
Laying 120 M Brick " 7.00	840.00
300 bbls. cement " 2.05	615.00
Broken stone, 200 cu. yds. at $1.05	210.00
Sand 100 " " " .75	75.00
Labor on concrete, 200 cu. yds. at $2.00	400.00
Sundry carpenters, &c	100.00
Central pipe and bolts	120.00
Jack-screws	45.00
Bed plates	32.00
Lumber	200.00
	$3537.00
20 %	707.40
	$4244.40

1465 Q. Mr. Kimball at the top of page "86" of William Wheeler's deposition is an item "Stand-pipe, L. B. 25 ft. diam. x 70 ft. high, including foundation $6,400.00" which with 20% added makes $7,680.00 of the construction account. I wish you would give the items that make up this estimate?

A. We did not estimate this by items, the stand-pipe not having been built under our supervision, but we did estimate it from our general experience in building stand-pipes of similar size and character in other parts of the country.

Q. Then you made no specific estimate of the amount of materials, labor, &c entering into the construction of this stand-pipe?

A. Only as they would be determined by our general experience in building stand-pipes of the same size and character.

Q. You have no data then bearing on this estimate?

A. Nothing further than I have stated.

Q. Now Mr. Kimball what is the difference in the expense of the operation of the plant with high pressure and without high pressure?

A. As our plant at present is operated there is very little difference, from the fact that the same operator controls the filter plant that runs the high service pump, and to operate the filter plant the services of the two operators at this plant would be necessary and at the same rate of wages; the only additional expense therefore that would be incurred in operating the high service,—assuming that the filter plant has to be operated,—would be the necessary coal, oil, waste, &c used in directly running the pumps.

Q. Well what was the additional expense between operating, say from the institution of the plant, up to 1901 per annum

1466 on account of high service, and of what did it consist?

A. As before testified, if it is assumed that the filter plant has to be operated, the labor and cost of pumping would not be increased over that of operating the filter plant and it would leave therefore only the expense of coal, oil, waste, &c to be accounted as the additional expense of pumping. It should also be borne in mind that some of this coal used, as well as oil and waste, is in the operation of the filter plant, it being necessary in washing out the filters to run the steam plant, and the same steam plant answers for both the high service and filter plant, and the best estimate therefore that can be given is to assume some part or all of the coal as having been used in the high service pump, but in doing that there is an element which vitiates all the results, so far as accuracy is concerned, that can be obtained therefrom, and what division of that coal account to make as between the two, we have never kept any records or accounts which will enable us to accurately determine. With this statement of division of operations there, I shall be pleased to answer that question in any way that I may be directed—as to whether I shall assume all the coal or only a portion of it as chargeable to the high service pumping.

Q. Now Mr. Kimball I believe you have stated, though it has not gone down, that you keep a record in your office of the pumping from the reservoir to the high station—you know the average eleva-

tion to which the pumping is to be made. Now are there not tables that state the average cost of pumping water by the thousand gallons to a certain height; if so that is what I want, the number of gallons pumped each year with the average of pumping water that high?

A. The cost of pumping water per million gallons is
1467 something that is based entirely upon local conditions, and while a general statement might be made, it would not necessarily cover the conditions existing here, and particularly it would be unfair in connection with our high service pumping for the reasons just stated, that owing to its combination with other operations of the plant, the pumping there is done very much cheaper than where that is the sole business of the plant and operators.

Q. Well just give us, with your explanation the tables—what the tables show as to the price of pumping water per million gallons the average height that it stands in this stand-pipe above the reservoir, and the number of gallons pumped each year and that will satisfy us?

Mr. CALDWELL: Plaintiff excepts to the question calling upon the witness to give tables in evidence because it does not appear that there are any such tables, and second if there are such tables they are available for the uses of the defendant without putting them in this record.

COMMISSIONER: I think that objection is good. I think he has the ground work from the books of this company. Let us have him state the number of millions of gallons per annum.

Q. Well state then the number of millions of gallons pumped from the reservoir into the stand-pipe, per annum, for the years inquired about.

A. We commenced operating the high service April 26, 1894 and from that date to March 31, 1895 there were pumped into the high service system 34,860,000 gallons; for the year ending March 31, 1896, 15,320,000 gallons; for the year ending March 31, 1897, 13,932,000 gallons; for the year ending March 31, 1898,
1468 13,583,000 gallons; for the fiscal year ending March 31, 1899, there were pumped 27,469,000 gallons. On about the 21st day of October, 1899, we commenced to pump into the West Knoxville system, furnishing them however, with only a part of their water, and for the fiscal year ending March 31, 1900, there were pumped 34,826,000 gallons. Beginning in May 1900, the high service plant furnished all the water from then on used in West Knoxville, as well as in the territory heretofore furnished. In the year ending March 31, 1901, there were pumped by the high service, 167,028,000 gallons.

Q. Now what was the average height to which this water was pumped, Mr. Kimball?

A. During the latter part of this time when we have been pumping into the West Knoxville plant, we have been pumping against an average head of about 170 feet.

Q. I mean above the reservoir now, I am talking about?

A. Yes sir, that is the head that the pump works against and in explanation of this head I will state that in pumping through the long line of main into the West Knoxville stand-pipe, the friction loss, or as it is sometimes termed the friction head in the pipe adds this additional pressure to the pumps over and above what the actual height of the stand pipe would seem to call for, and from the time that we pumped into the West Knoxville stand-pipe from its beginning until the East stand-pipe had been raised, we were obliged to pump with the East stand-pipe shut off and thus force the water against this additional friction head through this line of pipe into the West Knoxville stand-pipe. Before we began to pump into the West Knoxville stand-pipe the head pumped against ranged from 75 to 85 feet, the difference in this pressure over and above the height of the stand-pipe above the pumps being due to the
1469 friction head in the connecting pipes as above stated.

Q. Then on account of the distance of what you call the West standpipe, that is the big one out here from the pumping station, you had to pump against nearly 100 feet more head after it came into use than before, to get water?

A. Against about 70 feet more head.

Q. And that was on account of the friction incurred on account of the long distance the water had to travel through the pipe?

A. That is right.

Q. Now the water that goes into the West stand-pipe, or the head that stands there, is about two miles from the center of supply from the town of West Knoxville?

A. It is about 1¾ miles from Fort Sanders.

Q. That is close to the center of West Knoxville?

A. Well it is not the center, but close to the center.

Q. This water passes through that pipe to get to that stand-pipe?

A. Yes sir, most of it.

Q. And returns back through the same pipe to West Knoxville, doesn't it?

A. Such that returns, does.

Q. Now can you give an estimate of the additional amount of coal that is necessary to produce this power to run the high pressure each year?

A. As before stated I can give you the total amount of coal used at both the filter plant and high service; but we have no record or data whatever to separate the two as they are used through and with the same boilers.

Q. Well now in other words they are run jointly by the same laborers, by the same fuel and the same machinery to a large extent as far as operating expenses are concerned?

A. That is correct.

Q. Well wouldn't it be about equitable in the running of
1470 the filter and high service to make it about equal, labor, fuel and everything?

A. I should say not as to the labor from the fact that the filter plant is in operation co-incident with the running of the pumps at the river, which during the period mentioned has averaged

from eleven hours in every twenty-four to the full twenty-four hours at times, while the actual time used in running the high service pump has averaged as a minimum 20 minutes in the twenty-four hours in 1897 to about five hours a day at the present time.

Q. Well now what would be an equitable division of the expense of running the whole of the filter and high service plants between the two?

A. Well that is purely a matter of judgment for which one man's opinion perhaps is as good as another's, for the reasons stated,—were the high service cut off entirely, we would save nothing at all in labor, and the prevailing small amount of time given by the operators to the operation of the high service pumps, cut very little figure.

Q. Suppose you were to cut the filter plant off and run the high service alone; we will not suppose that either is run for the benefit of the other?

A. That is the point that I am trying to get at although perhaps in another way from what you are. Taking that fact, as regards operators or labor charged, into consideration, and the use made of the coal by the filter plant, and allowing the time of the operators to off-set the coal used in the filter plant, it might be an equitable adjustment to charge as expense for running the high service all the coal used to the high service, simply as a means of getting at the proximate cost of the same.

Q. Well could you definitely give the cost of the coal used?

1471 A. I cannot give the cost of the coal, but I can give the number of pounds of coal used as recorded in the record book each year, my inability to give the cost of it being occasioned by the fact that I wasn't in active charge of this plant from 1895, the latter part of that year, to 1899. From April 26, 1894, to March 31, 1895 there were used at the high service and filter plant 438,510 pounds of coal; for the year ending March 31, 1896, 288,000 pounds of coal; for the year ending March 31, 1897, 259,700 pounds; for the year ending March 31, 1898, 196,600 pounds; for the year ending March 31, 1899, 257,050 pounds; for the year ending March 31, 1900, 481,950 pounds, and for the year ending March 31, 1901, 1,109,135 pounds.

Q. Now Mr. Kimball the territory in which the high service is essential is quite limited in North Knoxville, isn't it?

A. It does not embrace the whole of North Knoxville, but it does embrace the higher portions of it.

Q. Now when you extended the operations of your plant, after its consolidation with the Lonsdale-Beaumont Water Company, you put in a new main, didn't you, through which water is passed to the West stand-pipe and into North Knoxville along Clinch street?

A. We did, yes sir.

Q. You already had connection with West Knoxville by another main, did you not?

A. Before the consolidation?

Q. Yes sir.

A. We had no connection with the Lonsdale-Beaumont pipe system before consolidation.

Q. But you had mains running into West Knoxville?

A. We had one 6 inch pipe running into West Knoxville.

Q. And what was the size of this main you put in running along Clinch street?

1472 A. It is 16 inches in size from the stand-pipe to Gay street, and 12 inches in size from Gay street to Seventh street in West Knoxville where it connects with the pipes of the Lonsdale-Beaumont system.

Q. Now hasn't that main broken several times, Mr. Kimball?

A. There have been no breaks in it since it was finally put into operation.

Q. Have you kept the full pressure on it?

A. Not only has the full pressure been kept on, but as I testified a moment ago there has been an abnormal pressure because of the friction heads in the pipes in pumping across this district which wasn't anticipated when the pipe was laid.

Q. How many breaks did you have in it just after it was laid?

A. I cannot recall as to——

Mr. CALDWELL: We except to the question as immaterial.

COMMISSIONER (to the witness): How long since you had a break in it?

A. Not since it has been put in operation.

Q. How long has that been?

A. Since May 1900.

Q. My point is, you say not since it was put in operation; has it since you put water in it?

A. There has been no break in it since it was finally turned over for use to supply the West Knoxville territory.

Q. Well now you had turned the water on before that time and had to take it off?

A. Certainly we did.

Q. Then didn't you have several breaks in it?

Mr. CALDWELL: We object to the question as calling for matters wholly insignificant and which can be of no benefit in the case whatever.

COMMISSIONER: I sustain the objection, my theory being that it has been operated since 1900 without a break.

Q. Mr. Kimball, what amount of construction supplies did
1473 you have on hands the 31st of March 1901?

A. Supplies to the value of $9,221.87 in addition to operating supplies amounting to $567.60.

Q. How did you arrive at this estimate of construction supplies?

A. By taking an accurate account of stock as of that date of all supplies on hand and applying the cost price to them as near as they could be ascertained.

Q. How largely did they consist of old material—old pipes that had been taken up, and old hydrants and stop-cocks?

A. Nothing was included in here at full prices except material

which was equivalent to new material. Where material was included that wasn't equivalent to new material, it was listed at equivalent prices to its character or condition and in some instances no price at all affixed to it.

Q. Well wasn't there a very large portion of this—didn't it consist of old pipe and old valves and other material—old fire hydrants that had been taken out?

A. To the best of my judgment and belief, it did not.

Q. Well about how much of it did consist of that sort of thing?

A. I cannot state any further than I have; certainly not over 10% of it, if that amount.

Q. How much was your construction supply account on the 31st of March 1902?

A. $13,265.75.

Q. Is it made up and explained in the same way as the former one?

A. Exactly.

Q. On page "500" of William Wheeler's deposition I find an item "223" services applied for April 1st to July 1st, laid free of expense to consumer, $8.00, amounting to $1,784.00. What is the significance of the term "applied for" there? Were those services applied for and actually instituted during that period—all of them?

A. They were applied for between these dates, but it is
1474 possible that some applied for near the close of this period were not laid until some few days after, in the ordinary course of business.

Q. So that item represents the services applied for and not in full the services put in during that period?

A. It is barely possible that some of them were not put in on July first, but they were within a few days later, if not then.

Q. Now on page "499" of William Wheeler's deposition I find an item "Furnishing, setting and connecting 4 fire hydrants, complete at $37.00, $148.00." This item does not state what kind of fire hydrants those were; will you give them, the manufacturer, number of nozzle and size of connection?

A. One of these hydrants was a 2 nozzle hydrant with 6 inch connection, set on the corner of Laurel Avenue and Ninth street in West Knoxville; the other three were hydrants which in relaying pipes were taken up and reset in the same or different locations as testified to about a similar item on yesterday, and are 1 nozzle hydrants of 4 inch connection.

Q. The latter were such as entered into the original construction of the plant then?

A. I think all three of them were in the original construction of the plant or in that construction prior to 1891.

Q. On page "501" of William Wheeler's deposition under the head of "High service pumping station and filter plant" there are several items for excavation, regarding, Portland cement concrete and plastering, &c. Were these embraced in your statement of the cost of the high service awhile ago?

A. This, while headed "High service pumping station and
1475 filter plant" has nothing whatever to do with the high service, being a portion of the filter plant.

Q. Are these estimates the actual cost of the work?

A. They are estimates the same as the rest of the analysis.

Q. Can you suggest a basis upon which an expert can examine this work and ascertain its accuracy, or can you give any data for other than as it appears here?

A. An expert can have access to the work itself, examine and measure it and verify it from the plans in our office from which this work was constructed.

Q. You have plans from which it was constructed then?

A. Yes sir.

Q. They are in your local office here?

A. They are, and have been tendered for use in this case.

Q. Mr. Kimball, what width of ditching are these estimates of yours and William Wheeler based upon for laying pipes in the streets?

A. As testified in direct examination, we line out our ditches——

Q. You have stated that, but I want to know what your estimates were based upon?

A. Our estimates were based upon the ordinary practices in pipe laying, and right here I will state that a difference in the width of six inches more or less does not materially, if at all, affect the price, as a laborer can work with so much more freedom in a trench wide enough to easily get about in, that he will dig the additional width quicker than he will in a narrow or contracted ditch.

Q. Still you have not answered specifically what your estimates are based upon?

1476 A. I have answered as well as I can upon the general practice in water works pipe ditching.

Q. Well just give me the widths you adopted in making this estimate; it is not stated?

A. It is not specifically stated but is based upon ditching experience in work of this character.

Q. Well did you figure on 3 feet, 2½ feet or more or less as the width of ditches in your estimates of replacing macadam, &c.?

A. In our estimates of replacing macadam, we figured on a width of 3 feet to be replaced.

Q. Well in figuring your stone excavation, what width did you figure on?

A. Rock work is usually estimated on an average width of about 2 7/10 feet.

Q. Was that the basis of your estimates in this case?

A. So far as rock is concerned, yes sir.

Q. For all sizes of pipe?

A. For all sizes taking them as they average, although in this connection I will state that in blasting out ditches in solid rock they are frequently taken out to a much greater width, but that is the usual allowance which is made to a contractor, and that is what has been assumed in these estimates.

Q. From whom were the pipes purchased for the North Knoxville plant?

A. My recollection is that they came from the Chattanooga Pipe Works.

Q. Were they not of a lighter character than ordinarily used in this plant?

A. They are of the same weight and character, substantially, as all pipes laid from and since 1891. They appear to be somewhat lighter than those laid in the earlier constructions from the
1477 best information obtainable.

Q. Will you give the weights of the North Knoxville piping?

A. The contract weights of pipe laid in North Knoxville by Wheeler & Parks in 1891 were for 4 inch 250 pounds to the length of 12 feet; 6 inch, 380 pounds; 8 inch, 500 pounds; 10 inch, 710 pounds and 12 inch, 895 pounds. These weights are always subject to a variation with the foundry either way; that is, a pipe 4 per cent. lighter, or 4 per cent. heavier is accepted and the general practice of the foundries is to send pipe of fully that weight, and usually ranging from the mean to the maximum, so that we find that pipes run about 2 per cent. heavier as a rule than the mean weight upon which contracts are made.

Q. What has been the range of prices of cast iron pipe from 1891 up to 1901—the lowest and highest?

A. The price of pipe depends very largely upon the size; smaller sizes costing more per ton than larger sizes. The cheapest price that pipe has been in that period, delivered here at Knoxville, I think was $16.60 per ton, and it has ranged from that to $32.00 a ton up to March 31st 1901.

Q. Now this higher price was for the smaller size of 3 inch, this $32.00 per ton?

A. I think up to March 31st 1901 no pipe, except 3 and 4 inch had reached a higher price than $30.00 in that period.

Q. Now in making your estimate of replacements, you used what figures for the prices of pipe?

A. We used in our estimate of replacement the figures at
1478 which we were purchasing pipe as of the date given, September 30th 1902, which is for 3 inch pipe, $36.60 per ton; 4 inch, $33.60; 6 and 8 inch, $31.60 per ton and 10 to 20 inch $31.00 per ton.

Q. Those were higher prices than pipe had commanded for fifteen years before that time?

A. They were higher prices than had been in vogue since 1891, certainly.

Q. I do not know whether I understand what is meant by depreciation complete and incomplete. Will you explain what you mean by that term Mr. Kimball?

A. In our analysis we have used the term "Complete Depreciation" to describe that part of the plant which has entirely gone out of use, either by being replaced or by discontinuance. Continuing Depreciation is a term used to denote that depreciation or impair-

ment which is constantly going on in all construction of whatever nature.

Q. I do not understand that depreciation means necessarily that the property has gone out of existence but simply out of its useful part of the plant, is that correct?

A. The term that we have used of "culminated" or "complete depreciation" infers some part of the plant mentioned that has ceased to be of use or value, either to the plant or otherwise.

Q. Well now, take for instance, to illustrate my meaning, the real estate of the Lonsdale Beaumont Water Company that you figure in your "complete depreciation." The company still owns that property don't it—that real estate?

A. A portion of it, yes sir.

1479 Q. But it is serving no purpose in supplying water, is it?

A. None whatever, that is, some of it is not.

Q. I am speaking of that which you figured out—the Tillery lot and others—the company still has that property?

A. Yes sir.

Q. Yet it is figured as "complete depreciation" because it no longer serves any purpose in the operation of the plant, is that correct?

A. That is correct with this reservation, that where any material part of the plant has reached a complete or culminated depreciation, whatever value or salvage there is in that plant is deducted from the total cost of it, and only the balance entered up as "complete depreciation."

Q. Where have you deducted the value of this real estate out here, in your accounts, that the company still holds and is not using, and is figured as "complete depreciation"?

A. What part are you now referring to?

Q. I refer to the Tillery lot particularly, and some other pieces of property out there?

A. The Tillery Springs lot has not been deducted from the plant in the shape of depreciation, but is still held at the assumed value of $1000.00 given it as a part of the property of the company, at the present date.

Q. Well it no longer serves any purpose of the operation of the plant, does it?

A. It does not; it is merely one of the assets of the company.

Q. Well now what is the amount of complete depreciation according to your figures in this case?

1480 A. On what date sir?

Q. On date of March 31, 1901?

A. The total amount of culminated depreciation on March 31st, 1901, with accretions thereto from the time of culmination to March 31st 1901 amount to $107,015.68.

Q. Now what was the amount at that date of the incomplete depreciation of the remainder of the plant that was in use at that time?

A. You mean by that question the depreciation which has accrued to this date, but still incomplete on the plant in use?

Q. Yes sir.

A. The amount of that depreciation is $77,726.51 as we have figured it.

Q. Now turning to the first page of your Depreciation summary, contained on page "166-A" I find the item "L. B. Plant" and under the heading "Construction Cost of Plant to March 31, 1901" the amount $3600.00, at the time of culmination $1000.00. Now will you explain the process by which you arrived at those figures, and just what you mean by them?

A. The item of $3600.00 contained on page "166-A" of William Wheeler's deposition, is the construction cost of that portion of the real estate obtained from the West Knoxville plant as shown in detail on page "84" of the same deposition, and the amount of depreciation complete and determined by discontinuance or replacement at the time of culmination, is found in the same deposition on page "164" with full explanations as to how they are obtained.

Q. Then as I understand you count that $3600.00 worth of real estate the price at which you estimated that real estate in your schedules had been depreciated $1000.00 The 31st of March
1481 1901?

A. That is correct.

Q. And that there remained $2,600.00 of it, still not depreciated?

A. As an asset of the company, or a part of its plant.

Q. Well now, isn't it a fact Mr. Kimball that only $600.00, to-wit: the stand-pipe lot, of that real estate, is serving any purpose whatever of the company at this date?

A. At the present time that is true, except so far as they may receive an income from the rent of that land.

Q. But it is serving no purpose of furnishing water through this plant, is it?

A. That is true.

Q. So that really the whole of that $3,600.00 had gone out of the plant so far as serving any useful purpose in the operation of the plant is concerned?

A. That is not true.

Q. Why?

A. In the first place in that $3,600.00 is included the West Knoxville stand-pipe lot.

Q. I mean that $3,000.00 of it had gone out absolutely so far as serving any useful purpose was concerned?

A. $1,000.00 of it as given in the shape of rights-of-way and water rights has culminated and entirely gone out of use, both for water works purposes and as property; the other $2,000.00 still remains in possession of the water company as property, and in our judgment well worth it, but is not at present used for water works purposes.

Q. Well it wasn't contemplated that it would be used for water works purposes when you took in the Lonsdale-Beaumont Water plant?

A. When we took in that plant, $1,000.00 of this $2,000.00 in

question was the value upon the lot of land upon which the then Lonsdale Pumping Station was situated and was being used
1482 for the purposes of pumping the water at that time; the remaining Tillery Springs lot, as I testified yesterday, has never to my knowledge been used for water works purposes, although I believe at one time it was so contemplated to use it.

Q. You never used any of that property out there of the $3,600.00 worth except the stand-pipe lot only as a temporary expedient while you were changing your works so as to supply from this station?

A. We used permanently and not temporarily one of these parcels and maintained it until other arrangements were made to do away with its use as a pumping station.

Q. How long did you maintain it?

A. From the time of the acquirement of the plant until about July or August 1900.

Q. So on the 31st of March 1901 it was not in use?

A. It was not, not for water works purposes.

Q. What other properties besides this Lonsdale-Beaumont property that I have been speaking about does the company own that it is not using for water works purposes?

A. They have, I think, a lot of land in North Knoxville on Coleman street, so called, purchased—I cannot give the date, but that lot does not appear in this analysis. With the exception of that I do not at this moment recall any property, and especially none in the analysis, that is not in use, although I would not so state positively and unreservedly without a thorough examination.

Q. I would like for you to make a thorough examination and state fully on that subject?

A. I am fairly well satisfied that there is none; I certainly can recall none.

Q. Well hav-n't you some pipe that is not in use?
1483 A. You mean on top of the ground or laid in the system?

Q. Heretofore laid and embraced in this analysis, hav'n't you pipe that is not in use?

A. Not to my knowledge.

Q. Well you would know it if there was, or could ascertain the fact?

A. I think I would know it if such were the fact.

Q. Hav'n't you some in the old 10th Ward that you contemplate taking up?

A. Not that I know of.

Q. Mr. Kimball, do you know what the population of Knoxville was in 1885?

A. I understand that the population of Knoxville in 1885 was somewhere between 8,000 and 10,000, although my source of information is not very good.

Q. Do you know what it was in 1891 exclusive of North Knoxville?

A. I believe the census population in 1890 of old Knoxville itself was twenty-two thousand and something.

Q. Do you know what that of North Knoxville was?

A. Relying simply on memory, it was a little over 2,000.

Q. And West Knoxville?

A. I think about the same; maybe a little less than North Knoxville. That is all a matter of record.

Q: Now Mr. Kimball in reference to the taxation of your company, you have resisted all of the assessments that have been made against you as being too high for the last several years?

A. Not to my knowledge, the matter of taxation being something that the only attention that I have personally paid to it is that when they are due, to pay them.

Q. Then you have no connection with that matter?

A. I have had nothing to do with that matter at all.

Q. Don't you know as a matter of fact that your company
1484 has had here before the local Board of Equalization and at Nashville before that Board each year, complaining that its assessments were too high?

A. Whatever information I have upon that subject is all hearsay as I have never attended the Board of Equalization's meetings and consequently know nothing about anything that ever took place before one.

Q. Mr. Kimball I will ask you to examine the letter that I now show you dated July 20, 1900, purporting to be written by the Knoxville Water Company, by Mr. Elbert Wheeler, Treasurer to Mr. A. S. Birdsong, Chairman of Water Committee, Knoxville, Tennessee, and state whether it is the original and genuine letter of Mr. Elbert Wheeler, Treasurer of the Knoxville Water Company, and have the same copied into your deposition?

A. This appears to be the original letter referred to, and I have every reason to believe that it is. It reads as follows:

Knoxville Water Co., Elbert Wheeler, Treas., 14 Beacon Street, Boston, Mass.

JULY 20, 1900.

Mr. A. S. Birdsong, Chairman of Water Committee, Knoxville, Tenn.

DEAR SIR: Yours of the 17th inst. to our Superintendent at Knoxville, is referred to us for reply as stated in his acknowledgement thereof to you of same date.

Presuming that your letter was prompted by the communication
of the 16th inst. from his Honor, the Mayor, recommending
1485 for reasons enumerated by him, the specific inquiries contained in your letter to us, you will permit us to say that even should we concede the right of the City to change the rates charged by us for water (which we do not, but on the contrary, maintain that these are fixed by existing contract stipulations between the City and us, and are therefore not subject to change except by mutual agreement), the Committee would have no adequate basis for reaching equitable conclusions by having the information asked for in interrogatory "No. 1" (which information is of course available to the City from the County Records), as the amount of the Company's

bonded debt represents only one of the several classes of capital invested in the Works, all of which are fairly entitled to reasonable investment return before any reduction of rates or of income can properly become operative.

We suppose however, that the City desires to avoid taking any action which would result in preventing such reasonable income return upon the moneys invested from time to time, which investments have been necessitated by the continued growth of the city, the demand for filtered water and numerous other additions to and improvements of the Company's plant, resulting in a system necessarily of large cost but giving the City a supply proportionate to its requirements, with water of a quality hardly to be equalled in any City of the South or West.

As the single purpose of his honor the Mayor in addressing your Committee was unreservedly stated to contemplate determination of the financial condition of the Water Company, in order that the City may be informed whether or not, the present rates are reasonable, in view of the cost or of said financial condition, and as your
1486 letter likewise unreservedly declares this to be the purpose of your inquiry, we may and do answer Interrogatories "2" and "3" by saying that the gross income of the company is not sufficient, after paying necessary operating expenses, including salaries, (which are merely nominal in amount to its executive officers), to afford or pay a reasonable return upon all of its several forms of capitalization; but, on the contrary, not a little of the money invested by its shareholders has been absolutely without return. Any reduction therefore, in net income through reduction of rates would necessarily and correspondingly postpone the time when such reasonable return could be obtained.

Any reply to question "4" could be only an expression of personal opinion, to which any one might, and doubtless with great propriety, well take exception.

The Fifth question it is impossible for us to answer, having no knowledge thereof. We may, however, say that Wheeler & Parks never owned the works, the title to them always resting in numerous stockholders, the present number approximating 200.

The Sixth inquiry is practically answered by the preceding statements, excepting as to the cost of improvements, which we respectfully submit is immaterial, in view of the declaration made in answering Interrogatories "2" and "3;" said costs being included in capitalization from which no adequate or reasonable return has thus far been possible of realization.

We have no desire to withhold from the City any information which is its due; but the statements above made should clearly
1487 indicate that any lower rates than those now existing, may not be deemed reasonable, when account is taken of the cost of construction and operation of the plant, as above set forth.

If further information is wanted, or if it is desired to equitably adjust this, or any other matter of mutual interest, we beg to assure you we will most gladly take it up with you, being confident that when a full understanding of essential details is reached, there can-

not only be no reasonable ground for complaint, but an adjustment reached to our mutual satisfaction.

Very respectfully,

KNOXVILLE WATER COMPANY,
ELBERT WHEELER, *Treas.*

Q. Now Mr. Kimball on the 21st of July 1900 wasn't a hearing given to Mr. Charles T. Cates, the regular attorney of the Water Company by the Mayor and City Council, at which the Mayor and nearly all of the Aldermen w*as* present, and did not a full account of that hearing appear in the Journal and Tribune on Saturday, July 21, 1900?

A. I should assume from this item in the paper that there was an informal conference of members of the City Council with Mr. Cates on Friday July 20, 1900, but it was entirely informal as I understand and recollect.

Q. It was before the members of the City Council, was it not, as well as the members composing the Water Committee?

A. I do not know that you would call it a hearing. It was a gathering together for an informal talk.

Q. You were there yourself at that hearing?

A. It so appears, yes sir; I have a recollection now of having been there.

Q. Who else was there representing the Water Company
1488 besides you and Mr. Cates?

A. I think nobody.

Q. Mr. Cates made about a two hours' talk to that gathering, presenting the Water Company's cause to them didn't he?

A. He talked for some length of time explaining matters and questions that were asked about.

Q. Wasn't he on the floor and answering questions for two hours?

A. I don't know what you call "on the floor." We were sitting in chairs. Various questions were asked. I believe some questions were asked of me which I answered, but as to what they were or how long any one was talking I couldn't state as the matter did not sufficiently impress me to remember.

Q. Well the members of the City Council gave you notice to come there and talk the matter over and give them such information as would enable them to act intelligently in this meeting, and that was the object of that meeting wasn't it?

A. I should say no, if I should answer it either yes or no. To the best of my recollection, which I admit is faulty in the matter, Mr. Cates asked the Chairman of the Water Committee if he would grant him a hearing before taking final action on this matter, and my further recollection is that this informal gathering was brought about as a result of Mr. Cates' request, and that it was purely informally held one afternoon at the City Hall. The meeting wasn't called to order nor was there any action taken to show that it was a formal hearing in any way, and the talk was simply face to face talk amongst the parties present, and on points connected with the Water

Company and its relations to the city. Farther than that my memory hardly carries me.

Q. And that was while the first ordinance was pending and
1489 under discussion?

A. Evidently, yes sir.

Q. And that meeting gathered pursuant to an appointment that was made in advance, wasn't it, and notice given to the parties of the time and place?

A. I have stated my best recollection of that General.

Q. You knew and Mr. Cates knew of the time and place of that meeting and attended it?

A. I have so stated.

Q. In that meeting Mr. Cates took the position that the city had no power to regulate the water rates, didn't he?

A. I have already testified that my memory as to the details is very poor. There was nothing especially to fix it on my mind, and no notes whatever were taken of the conversation, it being as I stated purely informal.

Q. Hasn't your company, and didn't Mr. Cates on that occasion contend that the city had no power to regulate the rates?

Mr. CALDWELL: We object to the question as being wholly immaterial.

COMMISSIONER: I sustain the exception. If General Pickle wants to ask the other question of whether the water company withheld the information as to what would be a reasonable rate, he can do so, or if they showed any reluctance to give any such information.

Q. Now Mr. Kilmall you say that ordinance was passed some few days after that on the third reading, and you gave notice to the office at Boston that it had been passed by letter. I wish you would produce that letter, a portion of which you have already put into the record, and make the whole of it a part of your deposition?

1490 A. I have not put any portion of that letter into the record. I have simply refreshed my memory from the letter as to the date of the passage of that ordinance.

Mr. CALDWELL: Plaintiff excepts to the foregoing question because it asks that there be put into the record a letter written after the passage of the ordinance, whose contents therefore cannot bear upon the question of investigations made by the City Council preparatory to the passage of the ordinance, which is a private communication from one of the officers of the company to the Home office, and which was used by the witness in his examination in chief not for the purpose of putting any parts of the contents of the letter in evidence, but only as a means of refreshing his recollection.

COMMISSIONER: The Master holds that the portion quoted from the letter is not of such material character as calls for the production of the whole letter and sustains the exception.

Mr. PICKLE: To which ruling of the Master the defendant excepts.

Q. Now what became of that ordinance that was passed at that time, Mr. Kimball; was an attempt made to enforce it?

A. There were so many of these ordinances passed that I would not attempt from memory to state the action taken upon any specific one of them. An attempt was made to enforce either this or the one passed I think in the month of October, but whether the attempt was made to enforce this one or the next one I am not certain.

Q. At any rate, the question remained under discussion, didn't it? after this ordinance was passed, and another ordinance precisely the same was passed in October in precisely the same
1491 language?

A. My recollection is that another one was passed in October substantially, if not exactly the same.

Q. Now wasn't the newspapers full of the discussion of this Water Company question at that time and of the meetings of the Council that were held for the purposes of these ordinances?

A. I presume there was more or less reference to the matters.

Q. You saw and read these articles?

A. I am accustomed to reading the papers.

Q. And you sent copies of the papers to the Boston office?

A. I did not.

Q. Were they not sent from this office to the Boston office?

A. No sir.

Q. You knew that the ordinance that was passed in October was pending and was being passed through the City Council, didn't you?

A. I presume I had newspaper notice of it possibly, but my experience with newspapers here goes to show that you can not rely too much on what they say.

Q. In point of fact did not you, or your company or other officers of the company have conferences with the Water Committee pending while the ordinance that was passed in October was pending before the City Council?

A. While I may be mistaken in the matter, I have no recollection of any conference with the exception of the one just spoken about prior to the passage of the next ordinance, with any member or the whole of the City Council.

Q. Don't you know that your attorney went before the City Council and before the Water Committee and again discussed the matter?

A. As I state he may have done so, and I also, but if I did
1492 my recollection is faulty in the matter as I can not at present recall any other conference until after the passage of the second one of these ordinances.

Q. You didn't remember this conference that you have just testified about when you gave your evidence in chief, did you?

A. That is very true, I did not.

Q. Now when the second ordinance was passed the matter went into the courts then didn't it?

A. I believe action was taken whereby it went to the courts.

Q. And the causes brought under that ordinance were dismissed on account of the omission of the word "annually" from the ordinance, were they not?

A. They were dismissed and I think that was one of the reasons for it.

Q. Then the same ordinance with the word "annually" embodied in it was passed through three readings of the City Council, was it not, before the litigation commenced again?

A. That is my understanding, yes sir.

Q. You knew from the public prints and otherwise of the pendency of that ordinance before the City Council, did you not?

A. I presume I was aware of the fact in some way.

Q. Now while that ordinance was pending wasn't you and your counsel before the Water Committee or City Council, or both, to present this matter?

A. Without any means of refreshing my recollection I would not say that I was or that I was not. I have on various subjects and various occasions been before the members of the city government, both in session and out of session, and I cannot recall definitely whether or not I was present at any hearing, conference or meeting with the City Council or any members of it before the passage of the ordinance of March 30th, 1901, but my best recollection is that I was not.

1493 Q. Can you not refresh your memory by looking to your correspondence with the Boston office and answer more definitely?

A. That might or might not state the fact of my attendance at such a meeting, assuming that I did.

Q. Well will you look to that correspondence and see whether or not that is a fact?

A. I will, yes sir.

Q. Mr. Kimball when you came here in 1891 you found a good many evidences that this company hadn't been managed very well, didn't you?

A. There were various things left undone here which in the proper management of a plant we have deemed it necessary to have, such as permanent records, maps, plans, &c. of the plant, and we have always deemed it advisable to have constant and frequent inspections made to determine the character, nature and kind of service rendered, which in very few instances had been done, but these matters may all have grown out of a condition in which the then management found themselves rather than from their desires.

Q. Well were not the books carelessly kept?

A. That is a question that is open also to the same answer as given before; it may have been their opinion that their books were kept in proper and sufficient shape for the purposes used, but they were not kept in the form and shape which we were accustomed to.

Q. Were they kept in such manner as to enable you from them to get any intelligent estimate of the cost of the plant or the revenues of the plant from the books?

A. So far as the revenues were concerned, I think they were. So far as the cost of the plant is concerned, I have no recol-
1494 lection of attempting to determine that from the books myself, and therefore cannot state.

Q. At any rate when you came here, in order to ascertain what composed the plant, you had to go into extensive investigations, didn't you?

A. We had a general idea of what composed the plant; for the purpose of tabulating the details of it we had to make quite extensive surveys and examinations.

Q. How were the collections as appeared from the management at the time you came here, for water. Were they promptly made or were they neglected?

A. When I first came to Knoxville they appeared to be made quite promptly.

Q. How many free services did you find on the list?

A. What is your meaning as to "free service?"

Q. A service that is furnished to a customer free of charge, or at a nominal charge, or at a less charge than the regular rates?

A. In the early part of my visits to Knoxville, I wasn't familiar enough with the collection of rates to answer that question properly. I had general information to the effect that there were few, if any customers on our books but what paid the regulation rate.

Q. Well upon your investigation, did you discover how that was?

A. My investigations never entered that part of the question to any large extent until some years later.

Q. Well didn't you find when you made investigations that there were a number of free services?

A. Do you mean from the time that I have been Superintendent of the company, since 1899?

Q. Well I am not asking you about that period yet; I am
1495 asking you for the former period?

A. Previous to 1899 my knowledge of the detailed accounts of collections is not sufficient to answer your question.

Q. Well did any free services come to your knowledge as existing in 1891 and prior to that date?

A. I have no specific knowledge of any.

Q. Did you have information that they had existed from officers of the company to a considerable extent prior to that date?

A. I had none that I recall; certainly there were none to any considerable extent, for had there been I should have known of it.

Q. By what authority are the rules and regulations of your company promulgated?

A. By authority of the directors.

Q. Who fixes these rates and regulations?

A. The directors, I understand.

Q. Are you sure it is done by the directors or by the president of the company?

A. I am quite certain that the final action in the matter is taken by the directors. It may be that the president or treasurer, who is also General Manager of the company, may between meetings of the directors, fix rules and regulations subject to the approval of the directors, but I think the final approval of such rules and regulations rests with the directors.

Q. Are all of your rules, regulations and rates applicable to the operation of this plant in furnishing water published in the pamphlet that you distribute, or are there any unpublished rules, regulations and rates?

A. The printed pamphlet was published April 1st, 1895 as I

recollect, since which time various amendments have been
1496 made, which are on file in the office of the company, but which have not been printed with the main schedule.

Q. May I have access to these rules and regulations?

A. They are at the disposal of the public, yourself included.

Q. Will you please produce them for inspection?

A. I will.

Q. Mr. Kimball, passing from the former question in which the regulations asked for have been produced, I will ask you in regard to this pamphlet of "Rates, Rules and Regulations" bearing date April 1, 1895, a copy of which is exhibited in the pleadings. In this pamphlet I find the following in regard to meter rates: "The Company reserves the right to attach a meter to any service at its option, and in lieu of the above rates charge the following" This is preceded by the table of fixture rates and followed by a table of meter rates. At the close of the table of "meter rates" I find the following, omitting one sentence. "Provided that the minimum meter charge shall not be less than $10.00 per annum and meter rent," and fixing in a subsequent clause "meter rent at $1.00 per annum." Under these regulations that I have just read to you your company has, or assumes to have the power of transferring any service from a fixture rate to a meter rate subject to the minimum and meter rate specified, does it not?

A. It claims that right, yes sir.

Q. In other words, a four room house or less having under this schedule a fixture rate of $6.00, may at the option of the company be transferred to a meter rate of $10.00 per annum as a minimum with $1.00 per annum meter rent?

A. I would first correct your statement as to $1.00 per year meter rent which I think the rules do not so specify; but to answer
1497 your question I will say that while technically the water company has that right, as a matter of business they would hardly do so.

Q. Well then what does this clause mean as to meter rent which I now read to you: "One dollar per annum for each ¼ inch normal size of meter?

A. Just what it says, that for each ¼ inch in size, one dollar per annum is charged. For instance for ½ inch $2.00, for ¾ inch, $3.00 and for 1 inch meter, $4.00 and so on per annum.

Q. What is the usual size of meter for domestic services?

A. For the purpose of regulating the meter charge, we assume them as ½ inch in size, although their designation is ⅝ inch.

Q. Then on domestic meters it would be $2.00 a year instead of $1.00?

A. That is correct.

Q. And the minimum for which a four room house having a fixture rate of $6.00 could get water, if transferred to the meter rate, would be $12.00, wouldn't it?

A. If transferred to a meter rate, yes sir.

Q. Now you collect quarterly on fixture charges, do you not?

A. We do.

Q. And monthly on meter charges?

A. That is so at the present time.

Q. Now suppose that the consumer uses instead of $1.00 worth of water each month, thereby making the minimum of $12.00 during the year—suppose he should use for some of the months, $2.00 and for others fifty cents, but during the year uses as much as $12.00. How do you dispose of a case of that sort. Do you allow him credit on the month for which he fails to use a dollar's worth, or do you make him pay for that month the full amount

1498 and pay the excess on the other months?

A. The Water Company has always interpreted that clause at the rate of $10.00 per annum for such period as the bill might be rendered, but owing to some misunderstanding that has arisen, one of the amendments to the rules spoken about awhile ago amends that, so that, without quoting the exact language it makes it read *at the rate of* $10.00 per annum with meter rent added for such time as the bills may be rendered, making the minimum rate, where the bills are rendered monthly $1.00 per month, which includes 83 cents per month for the water consumed and 17 cents meter rent.

Q. Then as I understand you such water consumer must pay $1.00 per month, whether he uses a dollar's worth of water or not, and that he must pay for the amount that he uses for each month, no matter how much it may exceed one dollar, and that one month cannot be set off against another in order to equalize the payment on the annual basis?

Mr. CALDWELL: I submit that these questions are not responsive to any issues in this case; the water company's rates are not on trial but it is the city's rates that are on trial.

COMMISSIONER: The exception is sustained.

The further taking of this deposition was adjourned until Saturday morning, January 24, 1903, at 9 o'clock a. m.

1499 SATURDAY MORNING, *January 24th*, 1903—9:00 o'clock a. m.

The further cross-examination of FRANK C. KIMBALL resumed.

Q. Mr. Kimball, Mr. William Wheeler has been present during your entire examination, or most of it as was also during the examination of Mr. Elbert Wheeler?

A. He has been present during my examination. I can not speak as to General Elbert Wheeler's examination from personal knowledge.

Mr. CALDWELL: That is a fact, and you may put it in the record that such is the fact.

Q. During the three weeks or more of the adjournment of taking evidence, after the close of Elbert Wheeler's examination, you were absent from the city; where were you and what were you doing?

Mr. CALDWELL: I object to the question as being an unauthorized inquiry into the affairs of the witness.

COMMISSIONER: I sustain the exception.

Q. Were you not at Boston engaged in the preparation of your testimony in this case?

A. I was in Boston on a holiday visit to my family.

Q. Mr. Kimball was there any separation kept of the revenues received from the North Knoxville plant after its transfer by Wheeler & Parks in 1893 to the Knoxville Water Company?

A. None to my knowledge.

Q. Any separate account of the expenses attaching to the running of that plant?

A. After its transfer to the Knoxville Water Company, I think not.

Q. I believe you stated that the old company had itself established more than 100 services in North Knoxville before that plant was instituted?

1500 A. Such is my impression, yes sir.

Q. And those were all that existed at the time of the transfer, were they not?

A. No sir.

Q. How many had been added?

A. I couldn't state; quite a number however.

Q. By what company?

A. By Wheeler & Parks, as the owners of the North Knoxville Company.

Q. Can you make any such separation of income and expenses from between the North Knoxville plant and the Knoxville Water Company from 1893 up?

A. No sir I cannot.

Q. The accounts are intermongled in such way as to be incapable of separation, are they?

A. That is the fact.

Q. Has there been any separate account of the income and expenses incident to the water supplied—furnished outside and inside the city limits at any time?

A. There has not, so far as I know, except as it is possible from the accounts kept with each individual service, and knowing where that service is situated, to be able to separate the income, but the expenses, except as an estimate, cannot be separated.

Q. And there has been no separate account kept of income from such services, has there?

A. Only as there is a separate account with each individual service.

Q. Do your books show whether a street service is inside or outside the city?

A. The books in the local office show the location of each service, and from a knowledge of the locality in which the service is situated, can be obtained the fact as to whether that service is inside or outside the city.

Q. But there is no statement on the books showing whether the service is inside or outside the city, is my question?

1501 A. The location of that service determines whether it is inside or outside the city.

Q. Well you please state whether the books show in themselves without pursuing the investigation further whether a particular service is inside or outside the city?

A. The statement whether a service is within or without the city is not on the books.

Q. Well that is what I am asking you about. Mr. Kimball, what is the cost of a set of new teeth for one of those filters over there?

A. That is a question that I could not answer from the fact that we have had no occasion under my supervision of replacing those teeth.

Q. How frequently is the sand restored in the filters?

A. That depends somewhat on the operations; so far as actual wear and tear is concerned, it lasts indefinitely, but in the operation of washing out the filters, more or less of it is wasted and has to be replaced. To replace the entire sand or an amount equivalent to the entire sand bed would probably not be necessary more frequently than from 20 to 30 years.

Q. Mr. Kimball will you state all of the sources of revenue of the Knoxville Water Company?

A. I should be obliged to produce the books to do that sir. I could only state them in a general way without the books.

Q. Well state them in a general way?

Mr. CALDWELL: I wish to suggest to the court that the revenue is entirely a matter falling within the province of the Treasurer, and we had him on the stand for two weeks.

COMMISSIONER: I think this witness is qualified to *to* answer that just as much so as the Treasurer would be.

1502 A. The revenue of the company, so far as it passes through my hands is from water rents, from occasional sales of material on hand, from the charges for service pipes put in, in one case for the rent of land owned by the company and such other moneys from sundry sources, the nature of which in addition to which I have already stated, I cannot now recall that may be paid into the local office.

Q. Well you qualified your statement by saying "so far as it passes through my hands." Are there any revenues of the company that do not pass through your hands?

A. I cannot state what revenues the company have that pass directly to the Treasurer, but I am satisfied that no revenues from water or the local operation of the plant come to him except through me.

Q. Well have you a knowledge of any other revenues that go to the Treasurer?

A. If by "revenues" you mean money in any form whatever obtained, he undoubtedly does have revenues of which I am not conversant, but nothing that I know of in the shape of direct earnings.

Q. Well is there anything in the way of indirect earnings that you know of?

A. Nothing unless—nothing that I know of.

Q. Well what do you mean in that last answer?

A. Nothing that I know of, in my answer to that question.
Q. What did you have in your mind when you said "unless"?

Mr. CALDWELL: I think the witness has answered the question.
COMMISSIONER: The question now is, he asks the witness what he had in his mind.
Mr. CALDWELL: I have no objection to the witness stating what he had in his mind.

1503 A. I cannot analyze my mind to that extent at present, General Pickle.
Q. Now Hav-n't you some knowledge or information that there are other matters that go into the hands of the Treasurer that do not pass through your hands, and didn't you have such source of revenue in mind when you used the word "unless" up there?
A. I have answered that question to the best of my ability.
Q. What amount did you receive in the year 1900-1901 from the city of Knoxville as shown by your books?
A. I should have to refer to the books to answer that.
Q. Well I will ask you to refer to the books?

Mr. CALDWELL: That information is in the possession of the other side.
COMMISSIONER: The information is clearly competent, I think.

A. Do you refer in this question to all amounts received from the city from whatever source?
A. Hydrant rental and from any other source, separating the hydrant rental from the other?
A. For hydrant service $11,455.00; for sundry services $794.97, Total $12,249.97.
Q. You have some special contracts with customers for water supplied hav-n't you Mr. Kimball, outside of these and different from your regular rates?
A. I think we have six or eight contracts with parties who are paying us 50 cents a thousand gallons for water instead of 25 cents, our regular rate.
Q. Upon what considerations do you furnish this?

1504 A. These were put in under a ruling of the Treasurer between the years 1895 and I think about 1900, whereby they agreed to pay this rate in consideration of their being allowed a meter at their premises; this rate being that fixed in the contract with the city .
Q. You mean it is the maximum of five cents an hundred gallons fixed in the contract?
A. It is the rate of five cents per hundred fixed in the contract.
Q. Nevertheless the maximum rate you refer to fixed in the contract; I do not know what contract you refer to?
A. The contract with the city of 1882.
Q. Who are the customers you refer to?

Mr. CALDWELL: I object to the question as not being relevant. Sustained. Exception taken by counsel for defendant.

Q. The reason I believe you state for charging these customers

double your regular rates was the consideration that they were to be allowed to meter the water they used, was it?

A. That is as I understand it.

Q. Would not your company allow the meters except upon those terms?

Mr. CALDWELL: I object to the question.

Sustained by the court.

Q. At whose instance were the meters put in?

Mr. CALDWELL: I object to the question and to this whole line of inquiry.

Mr. PICKLE: Certainly that is competent.

The COMMISSIONER: I sustain the exception.

Mr. PICKLE: This question is asked with a view to getting at the proper construction account for these meters.

COMMISSIONER: It will have to be put in another form or I
1505 will sustain the exception.

Q. Desiring to know how these meters will be considered in the construction account I will ask you whether they were put in at the expense of the company or at the expense of the consumer?

A. A number of meters have been set in town at the expense of the consumers, and where such has been the case they have not entered into the construction account of this company whatever.

Q. What I want to know is whether these particular meters you refer to were put in at the expense of the consumer or the company?

A. I was not here at the time they were all put in, but as they stand on our books, some of them were put in at the expense of the customers, some at the expense of the water company, our books in all cases showing which meters are as we term them, private meters, and which belonged to the company.

Q. Now have you any other special contracts than those of the character you have named?

A. I think we have some contracts whereby in consideration of making an extension of our pipe system beyond the amount which we lay ordinarily for a customer, the customer has guaranteed a minimum amount in consideration of such extension being made.

Q. How many of those contracts have you?

A. I am unable to state sir.

Q. Are they quite numerous?

A. I couldn't state from memory as to that; maybe a half dozen maybe 12 or 15.

Q. Do your books show the names of the parties and the terms of the contract?

A. The minimum amount of contracts of this nature
1506 are noted against the customers accounts in the books and could be obtained by going through all of the accounts and picking them out.

Q. Could you give the names of the parties?

Mr. CALDWELL: I object to the question as irrelevant and as not bearing on any issue in the cause.

Sustained.

Exception taken by counsel for defendant.

Q. Well now have you any other special contracts?

Mr. CALDWELL: I object to the question as I am unable to see how any of these inquiries bear upon the issues in this cause.
COMMISSIONER: I sustain the exception.

Q. Have you contracts by which you furnish special customers water at a less amount than the rates stated in your schedule?

Mr. CALDWELL: I object to the question.
Mr. PICKLE: I submit that that is competent; if they are giving away water or charging less for it, we should know it.
COMMISSIONER: I will allow him to answer that question.

A. I think we have one.
Q. That is with the Southern Railway Company?
A. The Southern Railway Company.
Q. Have you no others?
A. None that I can recall.
Q. Upon what terms, less than the regular rates, is water furnished to the Southern Railway Company?
A. The Southern Railway Company, as I recall the contract, is furnished with water on the following terms: For the first three million gallons used per month, seven cents a thousand gallons, for the next two million gallons per month, six cents a thousand gallons; for all in addition to five million gallons per month,
1507 five cents per thousand gallons, with the provision that if their monthly consumption exceeds ten million gallons, then the first two million gallons will be at seven cents, the second two million gallons at six cents and all in addition at five cents per thousand gallons.
Q. How much water did the company use in the year- 1900-1901 and 1901-1902?
A. That is a question I cannot answer without reference to my books.
Q. Well will you look to your books and answer for those two years?
A. I will. It is as follows: In year April 1, 1900 to March 31, 1901—80,800,950 gallons; In year April 1, 1901, to March 31, 1902—123,578,640 gallons, as per meters.
Q. Now can you think of any other customer of this class that gets water at less than the regular rates?
A. I know of no others at the present time.
Q. While I have it in mind Mr. Kimball, has there been any pipe taken up by your company that was not subsequently replaced?
A. I think so, yes sir.
Q. Where, how much and when?
A. As I now recall, all pipe that has been taken up and not replaced has been pipe of the Lonsdale-Beaumont Company which was rendered practically useless by consolidation. It embraced the gravity line, running from the Springs to the Pump House, or so much of it as was of cast iron—the force main from the pumping

station to Clinton Pike, and two lines of pipe laid in the Beaumont Real estate company's property which also was of no use. This covers all that I have recollection of.

Q. Did you give quantities and when taken up?

A. About 3,500 feet of 12 inch cast iron pipe on the gravity line above mentioned was taken up in the fall and winter of 1900;
4 3/10 feet of 10 inch pipe on a blow-off at the Lonsdale-
1508 Beaumont pumping station was taken up in the year April
1, 1900 to March 31, 1901; 326 2/10 feet of 10 inch pipe running from the Lonsdale-Beaumont pumping station to the Clinton Pike was taken up in the year ending March 31, 1902, and in the same year two lines in the Beaumont real estate company's property amounting to 1788 7/10 feet of 4 inch pipe was taken up.

Q. To what account was the expense of taking up this pipe charged?

A. On the books of the company, do you mean?

Q. Yes sir.

A. On the books of the company the expense of taking this pipe up was charged to Extensions, and Extensions credited with the value of all material recovered from it.

Q. How was it disposed of in your estimates in this case?

A. The value of this pipe, after deducting the cost of taking it up, was credited to the distribution pipe system, except in the case of the 3500 feet of 12 inch pipe which was credited to the account to which it was originally charged.

Q. What was the amount charged for taking up this pipe?

A. Do you refer to the amount charged as shown by the books of the company——

Q. Well I mean in your estimates, what does it amount to?

A. For taking up the 12 inch pipe, in our estimate 22 cents a foot was allowed; for taking up the 10 inch 18 cents per foot, and for taking up the 4 inch, 10 cents per foot.

Q. Now this pipe was taken up because that part of the plant was abandoned, and as being of no further use to the company in its business where it was situated, was it not?

A. That pipe when laid, was laid to perform the purpose for
which the works were established, and having performed
1509 that purpose, and other ways of operating being more economical, it was of no further use to the company and was therefore recovered and credit given for the value of it.

Q. Less the cost of taking it up?

A. That enters into the value of the pipe.

Q. You spoke heretofore in your deposition of certain extensions being made on terms as I understood you in which the parties should be credited with certain rentals upon assuming the cost of the extension. Am I right about that Mr. Kimball?

Mr. CALDWELL: I think that question was held inadmissible by the court.

A. Certain extensions have been made by the party benefited paying the whole or part of the cost of these extensions and then

being credited with an agreed upon proportion of the income derived from these extensions until they had been repaid,—the amount they had originally contributed to such cost.

Q. Well now how did you dispose of the amount paid by such customer upon your books?

A. Credited to extensions account such part as the party paid on account of that extension.

Q. Well now to illustrate, give an instance of that sort of extension, Mr. Kimball; you have one in mind; give us one so we can see the bearing of it?

A. An illustration of the way extensions of this kind made may be as follows: A. B. desires an extension to reach certain property of his which when laid costs $1,000. He agrees to pay this amount and the Water Company proceeds to lay the pipe, for the time being charging on their books the cost to extensions account. When this pipe is laid, a bill is rendered to A. B. for it who pays the
1510 entire cost, or such part of the cost as the contract calls for and this amount, if in this case the entire cost of $1,000.00, is credited on the books of the Water Company, thus balancing the extension account originally charged. Later, as water rentals are received from services supplied by the pipe in question, they are collected by the Water Company in full as are all others and at the dates stated in the contract (usually once every quarter) an account is made up of all receipts for water, the proper proportion, ½, ⅔ or ¾ as the contract may be, is then paid back to A. B. and this repayment is charged on the books of the company to Extensions, the sum of these repayments ultimately equalling the original cost of the pipe, at which time they stop, A. B. is paid back in full and the Water Company's books show by the sum of these repayments the first or original cost of the extension.

Q. In other words Mr. Kimball, the extension is paid for by the customer in the first instance and he is repaid that amount by rebate of his water bills, is that correct?

A. That is the idea, yes sir.

Q. Does that water rental enter into your estimate of the revenues of the company as they enter into this case?

A. It does, to the full amount.

Q. Does that rebate enter into the credit on water receipts that you make for rebates which is in the courts here?

A. It does not. As I have just explained, money paid out in this way is charged to Extensions account, and therefore cannot be charged to rebate account.

Q. Now you say rebates of that character are not included in the character of rebates that you claim upon water receipts in these estimates?

A. It is not.

Q. Mr. Kimball, you put in a great many meters in the year 1901 and in the year 1902 I believe, didn't you?

1511 A. Quite a number, yes sir.

Q. It is claimed by Mr. Elbert Wheeler in his deposition from calculations that were made by somebody in the office that

this resulted in a reduction of the revenue from the particular services on which meters were placed. Did you make up that statement from which he testified?

A. If you will allow me to see his deposition in connection with that statement I can answer it probably.

Q. Will you produce for my cross examination the books of account in which these services—the collections for these services are recorded before and after the meters were put in them?

A. I will.

Q. State what amount of water was pumped up to the time you began to put in meters in July 1901—what amount of water for some period, a month or other period—say for six months prior to that time, and six months after that time?

A. I can answer as to the total amount of water pumped in the months of July, August and September, 1901 during which three months the services were not affected by the large number of meters set, and also for comparison the months of July, August and September 1902 after these meters were set, and I find that the total pumpage in these three months of 1901 was 264,138,846 gallons.

Q. What three months do you refer to?

A. I stated for the three months of 1901, while for the same three months of 1902, the pumpage was 240,045,580 gallons, a decrease in pumpage of the quarter of 1902 under that of 1901 of 24,093,266 gallons.

Q. Now what is the average cost of pumping that water into the reservoir from the river to the filter plant per million gallons at these respective dates?

1512

A. I will prepare a statement of cost and submit it;—which is as follows:—

The cost of pumping water, per million gallons, during July, August and September, 1901, from the river to the filter plant, based solely upon operating expense at the pumping station at that time was $6.10

The cost of Pumping, per million gallons, during the same months in 1902 and also based upon operating expenses at the pumping station during that time, was $6.11.

If coal during this period in 1901 be assumed, for comparison, at $1.19 per ton, the price paid in 1902, instead of at $1.30, the average price paid during this period of 1901, the cost per million gallons in this period of 1901 would have been $5.95 instead of $6.10.

The price per million gallons in 1901 is also somewhat affected, for purposes of comparison, by the fact that the Deane Pumping engine was operated during a small portion of that period, while in the 1902 period the Worthington Pumping engine was operated solely, this latter machinery being more efficient and operating with less coal per million gallons pumped than is the Deane pumping machinery.

Q. You supplied a large- number of services at the latter date than at the former, didn't you?

A. We did, yes sir.

Q. How many more?

A. I can only answer that by taking the number of services March 31st of the various years, not of July 1st or October 1st.

Q. I suppose that would give the proportion pretty well?

A. And I find that between March 31st 1901 and March 31st 1902, 411 additional services were applied for.

Q. Would that fairly represent the proportion between the numbers on the 1st of July of each year, or during the periods you have mentioned of each year?

A. Yes sir, for the purposes of getting at this proportion, I would state further that between March 31, 1902 and September 30th 1902, the following six months,—211 services were added.

The further taking of this deposition was adjourned until Monday morning January 26th 1903 at 9 o'clock A. M.

1513 MONDAY MORNING,
January 26th, 1903—9 o'clock a. m.

The further cross-examination of FRANK C. KIMBALL resumed.

Q. Mr. Kimball, does not an examination of the books of the company disclose with reference to changes of services from fixture rates to meter rates that sometimes the effect is to increase and sometimes to decrease the amount of revenue realized from the service?

A. It does.

Q. And isn't it a fact that the books disclose in regard to this matter that the revenues derived from metered services for the same month in one year are more or less than the amount derived for the same service or services for the same period in another year?

A. The books do show the state of each service together with income received at all times from that service.

Q. Well you don't grasp my question Mr. Kimball: For example does it not appear from the books that the service that yielded a certain revenue for the month of July 1901 yields a different revenue more or less for the same month in a subsequent year?

A. That is exactly what I answered—that the books show the exact state of each account, whether it is more or whether it is less.

Q. I am asking you whether the books doesn't show that sometimes it is more and sometimes it is less—doesn't it differ or vary?

A. It certainly varies where the amount used is more or less.

Q. Well isn't it a fact that the books show that it does vary, and is a little more or a little less for some month- more than another?

1514 A. It shows so in some services, yes.

Q. Isn't it a fact with reference to the same service in the same year that the revenues yielded are different for successive months?

A. Under a metered service where the amount used varies, the amount collected naturally varies.

Q. Well to be more specific, Mr. Kimball, take any particular

service or services for the months of July, August and September 1901. Does it not frequently happen, and don't your books show that during those months that the amount of water used is different for each month?

A. It does frequently so happen.

Q. That is the question I am trying to get at. The number of meters have varied from year to year, hav'n't they?

A. They have.

Q. As likewise the number of fixture services?

A. They have.

Q. Now Mr. Kimball, it has been stated that the gross revenues received by this company in the year ending March 31st, 1901 was about $88,000.00—I don't remember the exact figures. Does this amount include all receipts from water and all earnings for furnishing water during that year?

A. For the year ending March 31st 1901, the sum which you refer to has reference to actual water collections.

Q. Was it simply the amount collected during that year, or the amount earned during that year?

A. It was the actual water collections.

Q. Are the statements for the years 1899-1900, and 1901-1902 made on the same basis?

A. They are, yes sir.

Q. The actual earnings or the amounts that accrued and were due for water furnished during each year might have been some different amount, might not they?

1515 A. They might have been, but they are substantially the same.

Q. Have you ever made up a statement showing the actual earnings of the plant during those years?

A. Nothing further than the actual water collections.

Q. How much of the earnings for the year 1899-1900 were embraced and collected in the year 1900-1901?

A. I cannot answer that question definitely, but it was less than $200.00.

Q. How much of the actual earnings of the plant for the year 1900-1901 were collected after the 31st of March 1901 and included in the year 1902?

A. I should reply, in effect the same as in the former answer and for this reason; as my recollection serves me, for the past three, four or five years, the uncollected balances carried forward from one year to another have been less than $200.00.

Q. Well do your books show the exact amounts?

A. Undoubtedly.

Q. Will you look to the books and give them for these two years?

A. —. ——.

Q. In your estimate of the earnings of this plant for the year 1900-1901 up to the 31st of March 1901, the meter bills for the month of March are not included at all, are they?

A. No sir, and on the other hand the meter bills for the month of March for the previous year were not included in that year.

Q. Now how many meters had you on the 31st of March 1900?

A. 251.

Q. Now how many had you on the 31st of March 1901?

1516 A. 275.

Q. How many had you on the 31st of March, 1902?

A. 1281.

Q. Well now in this sum of $88,000.00 *is* all hydrants rentals and meter box rentals included?

A. They are.

Q. Is there anything from which the company derives revenue which is not included in this amount for that year; if so what is it?

A. There may or may not be, and in explanation of that I will state that we occasionally sell some small suplies to the city and to individuals in the city which are sold at as near cost as possible, being simply as a matter of accomodation, and some of these articles may have been sold in these years in question, if so, they are credited to the Supplies Account to which account all articles purchased are first charged, so that it does not in any way enter into the water accounts of the company.

Q. Well I will ask you to what extent the books of your company show that these sales have been made?

A. That will require an examination of the books, but it is to a very small extent, $100.00 or $200.00 at the outside would probably cover the sales in a year which I have spoken about.

Q. Well now is there anything else you think of from which the company may have realized?

A. Nothing except that item of taps for which we receive usually $5.00 each and pay out something like $8.00 for puting them in. This account however is a construction account and not an expense or profit and loss account, and to the best of my recollection this covers all receipts that I know of.

Q. I will ask you whether you recollect now—you seemed to hesitate when I asked you before—whether anything goes directly into the hands of the Treasurer that does not pass through your

1517 hands that operates as an income to this company?

A. Nothing that I know of.

Q. Now do you furnish water to anyone in the way of barter, that is exchange water for materials or service or anything of that sort?

A. No sir we do not.

Q. Do you furnish water or have you in the past to the employés of the company or officials at less than schedule rates?

A. Every employé of the company from Superintendent down pays regular schedule rates.

Q. How long has that been the case?

A. Ever since I have had anything to do with the company.

Q. Now I want to know about your special contract with the Southern Railway Company about which you have already stated. Upon what consideration is water furnished to the Southern Railway Company at the reduced rates below that of any other customer?

A. A contract was made with the Southern Railway Company at a time when they were using water furnished from other sources and one consideration was their taking all of their supply from us and abandoning their other sources.

Q. What other sources had they?

A. The creek at Lonsdale and a supply of water furnished them in the Knoxville yards by the Knoxville Iron Company.

Q. Does your company, or its officials receive any concessions in the way of tranesportatieon, either for materials or persons from the Southern Railway Company?

A. No one connected with the Water Company, to the best of my knowledge and belief, ever received at any time either free transportation from the Southern Railway Company or concessions in freight rates.

Q. Mr. Kimball I will ask you to state what was the cost of instituting the filter service?

1518 A. That is all set out in our analysis.

Q. Is it set out in such way as to be separable?

A. It is summarized on pages "21" and "22" of William Wheeler's deposition in this case.

Q. What is the gross amount, will you state, I hav-n't his deposition before me?

A. (Witness hands atorney said deposition.) This summation showing the estimated physical cost of this plant does not include certain percentages which are further set out in the analysis.

Q. Well now the summation which you refer to is under the figure "9" letters "A" "B" "B" "C" and "D" on page "22" of said deposition, is that so?

A. That is correct, except so far as those items also include certain amounts intermingled with, and inseparable from the high service.

Q. These do include then both the high service and the filter except the stand-pipe?

A. Exactly.

Q. Mr. Kimball, when you took up pipe and relaid it, how did you dispose of the matter of ditching; did you or not charge for taking up the pipe and also for the ditching and putting down the pipe in these estimates you made?

A. We charged in these estimates for taking up the pipe a fair estimated cost of the items entering into that work. Where it required ditching it included that—naturally when pipes are laid it also includes ditching—and right here I will state that very seldom have the pipes been laid in exactly the same ditch that the old pipes came out of but nearly always in a different ditch.

Q. Where it was laid in the same ditch you charged for the ditching and also for taking up at these figures?

A. We charged a fair estimated cost of the work whatever was done.

1519 Q. Well that charge was uniform, whether you put the pipe in a new ditch or *or* in the old one from which it was taken wasn't it?

A. The price we assumed was uniform, yes sir.

Q. In a general way state on what streets of Knoxville the business or principal portion of the city is erected?

A. Gay stret, Prince street and Market Square with the cross streets for a block or two either way from Gay street.

Q. State street runs parallel with Gay street and one square back of the main business portion of the city, doesn't it?

A. It does, yes sir.

Q. What size mains have you on these streets?

A. On what streets?

Q. The ones you have named and I have named?

A. On Gay street there is a 10 inch main from Hill street to the railroad; feeding into this main is an 8 inch main on Jackson street, a 12 inch main on Vine Avenue, an 8 inch main on Commerce street, a 12 inch main on Clinch street, a 6 inch main at Church street a 4 inch main at Cumberland street, an 18 inch main for a part of the way, but entering into the Gay street main at Gay street on Main street and a 4 inch main on Hill street. These all come into Gay street from the easterly side. On the westerly side there is a 4 inch main at Hill street, a 16 inch main at Main street, a 6 inch main at Cumberland street, a 6 inch main at Church street, an 8 inch main at Clinch street, a 6 inch main at Union street, a 6 inch main at Wall street, a 12 inch main at Vine street, a 10 inch main at Jackson street. On Prince street there is a 6 inch main from Vine street to Main street, being a 6 inch main on both sides of Market Square. On State street there is a 6 inch main from
1520 Vine street to the alley in the rear of McTeer, Hood & Company's building, a 4 inch main from this point to Cumberland street, and a 6 inch main from about half way between Cumberland street and Main street to Front street.

Q. The main on Gay street throughout its length then I believe is 10 inches isn't it?

A. Such is the fact.

Q. What are the height of buildings on Gay street?

Mr. CALDWELL: If the Court please I object to the question as irrelevant.

COMMISSIONER: I cannot always anticipate the object.

Mr. CALDWELL: I don't see that that affects water rates.

Mr. PICKLE: It affects the value of the plant and that affects water rates.

COMMISSIONER: Let him answer.

A. I have never measured the height of any buildings on Gay street. They range from one story buildings to, I think six or seven stories.

Q. It is to a greater extent than any other street in the city occupied by tall buildings, isn't it?

A. There are quite a number of them, I should say to a larger extent than any other one street.

Q. The original pipe or main laid there in 1884 or 1885 is the one that is there today, isn't it?

A. The original pipe laid presumably in 1883 is there today so

far as I know, but it has been, since that date, reinforced by other and larger mains brought into it at the various cross streets, so that its capacity to day is fully equivalent to that of a 20 inch pipe
1521 fed only at one end.

Q. At what angle do these other pipes come into it?

A. At substantially right angles.

Q. How does it approach Gay street from the Reservoir; is it straight or does it come at right angles originally?

A. The pipe supplying the Gay street main, feeding into it from the Reservoir, approach Gay street approximately at right angles.

Q. On that side street that you speak about has that pipe been put in since 1883 since the main was put in on Gay street?

A. Some of it has and some of it was in the original construction I imagine, having found it here in 1891.

Q. There was pipe on all or substantially all of these streets when you came here in 1891, wasn't there?

A. No sir.

Q. On what streets have you put in pipe, and what sizes?

A. We have laid an 8 inch on Jackson street; we have relaid a 4 inch on Church street with a 6 inch; we have laid an 18 inch on Main street for a part of the distance, and have also substitued a 4 inch on Hill street for a 2 inch, besides laying numerous lateral pipes to improve the distribution.

Q. Well now you say you laid an 18 inch for a part of the distance on Main street; where is that?

A. Running from Gay street into the Creek, intersecting the cross streets.

Q. That is beyond Gay street from the Reservoir and supply station isn't it?

A. It runs from Gay street down to the Creek.

Q. What Creek?

A. First Creek.

Q. What sized pipe between that point and the supply station.

A. That is not connected at the other ends but is crossed by the pipes on State street and Central Avenue.

1522 Q. They come in at right angles too, do they?

A. They do.

Q. What is the effect upon the flow of water as between a straight flow and a flow that comes in at right angles?

A. Very little difference,—none appreciable,—speaking now of friction loss.

Q. Well what upon the quantity of flow?

A. The quantity is governed by the friction head and consequently would be of little difference.

Q. So it would not make any difference how many angles were in the pipes?

A. Within reasonable limits, no, sir.

Q. Or that they were at right angles?

A. No, sir.

Q. Now, Mr. Kimball, the general items making up operating expense account for the years running from March 31, 1899, up to the

present were furnished by Mr. Elbert Wheeler. I want to ask you to furnish a like statement for the year 1898-1899 under the same heads as are found on page "8" of Mr. Elbert Wheeler's deposition under the head of Alum, Fuel, Insurance, Filter Station, Pump Station, Repairs, Salaries, and Taxes?

Mr. CALDWELL: We except on the ground that that has already been excluded.

Sustained.

Mr. PICKLE: And I will ask for a similar statement from this witness for the preceding years back to 1891.

Mr. CALDWELL: We except on the ground last stated.

Sustained.

Mr. PICKLE: I desire to except to the ruling of the Master.

Q. I will ask you whether you have the books in the local office here that will show these things?

A. The Treasurer's books are in the local office at the present time.

1523 Q. Well the other books are here also, are they not, such books as the local office keeps?

A. Our books of the local office are here also.

Q. At what date did the Knoxville Water Company assume the operation of the Lonsdale-Beaumont Company? and its revenues and expenses enter into the accounts of the Knoxville Water Company?

A. It is my impression that the revenues and expenses of the Lonsdale-Beaumont Company entered into those of the Knoxville Water Company about January the 1st, 1900.

Q. The controversy over the regulation of rates had been going on in a general way for more than a year before any ordinance was presented for enactment by the City Council, had it not, Mr. Kimball?

A. Not to my knowledge.

Q. Had there not been a discussion over the question going on?

A. I do not know, sir, what discussions had been going on.

Q. Well can you fix a date when that agitation began?

A. No, sir, I cannot.

Q. It was carried on from time to time through the public, prints, the newspapers here, wasn't it?

A. I could not answer that question, sir.

Q. Mr. Kimball, I see in a table on page "42" of Elbert Wheeler's deposition that the operating expenses of the Knoxville Water Company for the years 1897-1898 and 1898-1899 were a little over $24,000.00 for each of those years and that in the year 1899-1900 they leaped to over $31,000.00 and for the following year to $35,000.00. Will you give some of the principal items that caused this increase in operating expenses between the two years, 1897-1898, 1898-1899 and the years 1899-1900 and 1900-1901. I mean the larger items that make up this difference?

1524 Mr. CALDWELL: We except to the question because it asks for a comparison of testimony excluded with testimony ad-

mitted by the Master into the record, and is an indirect way of bringing in the operating expense account for the years 1897 and 1898.

COMMISSIONER: Anything that the witness can answer from memory he may answer so far as it does not involve the preparing of a statement.

Q. Who actually made up these statements as to earnings and expenses?

A. Of what years, sir?

Q. All of these years?

A. I cannot answer that question. Some of them, I assisted the treasurer in making up and some he made up alone; none of them were made by me alone.

Q. Then you personally know nothing about their accuracy; I mean "know" not supposition?

A. Some of them I have verified from facts in my possession; those I "know," and so far as I assisted in making up these tables, I am competent to testify to them.

Q. Did you gather the figures from the books and do the additions, or who did?

A. Some of them I did as stated.

Q. Which ones?

A. I cannot now state with positiveness as to each of the figures employed. The statements submitted from April 1st, 1900, forward, I worked in connection with the Treasurer in preparing and can vouch for the accuracy of the figures therein stated.

Q. Did you and the Treasurer go back to the original figures, or were they furnished to you in tables?

A. We went to the figures on the books and from them
1525 obtained these results.

Q. You say you and the Treasurer did that?

A. We did.

Q. Now who made that up back of that?

A. Not having seen the table counsel refers to, I cannot state.

Q. You can find the table on page "42" of Elbert Wheeler's deposition?

A. I have no recollection of assisting him in making up that table.

Q. Mr. Kimball, what books or records of Wheeler & Parks office have ever been in the office of the Knoxville Water Company at any time?

A. I do not know that any account books of Wheeler & Parks, or any records of theirs, from a financial point of view, have ever been in the office, except possibly such memoranda, bills, &c., that were in my possession occupying office room in the Knoxville Water Company's offices when I was in their employ and doing their work.

Q. How long did they remain there, and when were they removed, such as you speak of?

A. To the best of my recollection there has been no memoranda

or bills, or anything connected with Wheeler & Parks financial transactions in the office of the Knoxville Water Company, since 1895.

Q. What became of them?

A. My presumption is that they are in the office of William Wheeler in Boston, but it is purely a presumption on my part.

Q. And he is the President of the Company?

A. Mr. William Wheeler is the president of the Company at the present time.

1526 Q. Mr. Kimball, in the list of hydrants that you have furnished in reply to a former question, which you took time to make up, fails to show the number of nozzles of hydrants in some instances. Can you fnrnish this information?

A. I have given in this list all the information that the Treasurer's books show on the subject, and there is no other way that I know of of obtaining additional information in relation thereto.

Q. I notice that you have noted a discount in some instances. These were discounts that were shown by the books, were they?

A. They were.

Q. Do you know whether or not other discounts were allowed that were not shown by the books on any of these items?

A. I have no knowledge of these transactions other than is shown by the books. My emphatic opinion is that no discounts were allowed except as shown.

Q. What was the freight and drayage each on hydrants, on an average?

A. That is a variable quantity which is hard to determine. As a matter of estimate, I will state that the freight on goods of this kind is about 70 cents per hundred, and that a hydrant weighs, depending on its character, from 450 to 600 pounds.

Q. Well what hydrant weighs 450 and what 600 pounds?

A. I cannot specify further than I have; the larger ones of course are the heavier weights.

Q. What is the average weight of the hydrants you use?

A. From 450 to 600 pounds.

Q. I notice you give a list of prices paid for gate boxes; are there different sizes of these gate boxes?

A. There are different lengths of them?

1527 Q. Does that affect their price?

A. To some extent, yes sir but the price is affected more by the price of iron in the various years than by the size of the boxes.

Q. What is the difference between prices at the same time of the different sizes?

A. They are substantially set out in the list given.

Q. It doesn't show sizes, it simply shows prices?

A. This list is made up in accordance with counsel's request to show from time to time minimum and maximum prices of gate boxes in the various years.

Q. Now I want to know what is the proportion between the price of the highest and the lowest price of these in accordance with size; there is no information here on that subject and I am asking for it. Take the year 1892, I see that you note in this list a price as low as

$2.45 and as high as $4.50 in the same year. What is the size of the gate box bought at $2.45 and what is the size of that for which you paid $4.50?

A. I cannot state from memory.

Q. The difference in prices is on account of the difference in sizes, is it?

A. Yes sir, substantially.

Q. And that is so of the whole list?

A. Yes sir that is of those listed for the same period.

Q. Do you know what the size of the gate box that you list here at $4.50 is?

A. I have just testified that I do not.

Q. What is the largest size that you use here?

A. What do you mean by size General? The size of gate boxes is determined in two ways, first in the size of the base which sets over the spindle, and second by the length of the cylindrical portion which comes to the top of the ground, and various combina-
1528 tions are made of the base and cylindrical portions, but which combination went into the price of this $4.50 size, I cannot state.

Q. You have used a comparatively small number of the larger and more expensive size, hav-n't you?

A. Very few of either extreme.

Q. Now is the same true of meter boxes in the list which you have furnished as of gate boxes, that the price is regulated by the size in the same period?

A. In explanation of the list for meter boxes I will state that these are all of the same size, but that they were purchased by the pound up to some time in 1901, and the difference in the weight of them being that casting margin which applies to all castings made the difference in price. Since some time in 1901 they have been bought by the piece with a specified weight under which they were not to go.

Q. Are there not different sizes of meter boxes or tops?

A. For all meters up to and including two inches in size, they are all the same.

Q. When larger than that, what?

A. When larger than that they are special sizes and special prices, none of which are included in this list.

Q. In the matter of gates of the same size, are there different prices on them?

A. The list submitted sets out an answer to this question better than I can give.

Q. I mean in the manufacture of the gates of same size, are there different prices?

A. Between manufacturers there may be; the same manufacturer may have a different price to different customers, depending upon the quantity purchased, credit of the customer, &c.

1529 Q. Now as regards these gates, do you know whether or not there was a rebate allowed by the manufacturers which they objected to appearing as a discount?

A. I can add nothing to my answer as regards hydrants on this subject.

Q. Have you heard the Treasurer or President of the company say there was a rebate?

A. Most certainly I have not further than is set out on the list.

Mr. PICKLE: (To Mr. Caldwell.) You may re-examine the witness, but I wish to reserve the right to recall him at a future time with reference to the expense account.

Redirect examination by Mr. CALDWELL:

Q. How long have you now been on the witness stand, Mr. Kimball?

A. This is my sixth day.

Q. How much time have you devoted to the purposes of this examination outside of court in the preparation of tables, statements and securing data for this deposition at the request of defendant's counsel?

A. Referring now simply to the time since I went on the stand, last Monday morning, commencing Tuesday evening, I have worked every evening until from 10 to 12 o'clock and all day yesterday up to 9:30 o'clock last evening in preparing facts and figures called for, excepting only from this time about two hours one afternoon when I was engaged in other matters; this time including also all day Wednesday when court wasn't in session, as well as Wednesday evening.

Q. Referring to the earlier part of your examination, you have stated that you took up some old pipe since 1891. How
1530 has that old pipe, taken up since that time been treated in the analysis prepared by you and William Wheeler—I mean pipe laid before 1891?

A. That pipe has been credited back to construction account, or rather the estimated cost of pipe laid in each year is credited with the full value of such pipe, less the cost of taking it up at the prices stated in each year of the analysis whenever such entries occur.

COMMISSIONER: Assume a case where you have taken up a 4 inch pipe and laid in the identical ditch a 6 inch pipe. I understand stock account or supply account would be credited with the salvage less the expense of taking it up, and the ditch remaining appears in the inventory the same as the original ditch?

A. That is a fact in the instance that you quote, but the cost of taking up pipe is by no means confined to the cost of digging the ditch—one-half or two-thirds of the cost being in unjointing the pipe, digging out the lead and getting the pipe out and to its place of storage. Had the ditch from which all the pipe which is taken up been available for use in laying new pipe, it is possible that the allowance for taking up pipe might have been one or two cents per foot less than it now is, but such wasn't the fact as nearly all, and while it is entirely an estimate I think I am safe in saying, fully three-fourths of all the pipe laid to replace pipe which was taken up, was laid in a different location or ditch, although on the same street as that taken up.

Q. What was the reason Mr. Kimball for replacing pipes in different ditches from the original pipe in so many instances?

A. Largely on account of the necessity for keeping up a
1531 water supply at the time, whereby it would not be possible, without depriving takers and in some instances the fire hydrants, of water during the process of relaying the pipes.

Q. Any other reasons?

A. That perhaps is the principal reason. Another one that I recall is where on account of other uses of the streets it was thought advisable and recommended by the city that we lay, in relaying, on the opposite side of the street.

Q. Referring to the considerable quantity of small pipe used in original construction presumably and taken up by you soon after you came in charge of the property, to what extent in your judgment, was that small pipe adequate for the purposes for which it was used or intended to be used at the time it was laid?

A. These pipes undoubtedly were large enough and fully adequate to supply the demands at the time they were laid.

Q. Then what was the reason for removing them at the time you took them up?

A. The fact in nearly all instances that they had then reached, or very closely reached their capacity and required replacement with pipes of larger size; other reasons being that on certain streets where small pipes were laid sufficiently large to supply the domestic consumption, were not large enough to supply a fire hydrant, and where the city ordered such hydrants, it was necessary to replace this pipe with the larger size for this purpose.

Q. What value have you assigned to this displaced pipe in your analysis?

A. We have assigned no salvage value to it, on the ground that the cost of taking it up equalled if in cases in fact it did not
1532 exceed what could be obtained from the sale or disposal of the material recovered.

Q. Are you still of the opinion that it was proper not to estimate any salvage allowance for this pipe?

A. I am, yes sir.

Q. You have given testimony as to the charges for sand, lime, &c. used in laying brick. I wish you would state the means by which you acquired information to justify you in testifying on these points?

A. As to the quantity used, it is the result of long observation and a large number of actual measurements as to the quantity of the various materials used, or necessary to be used, in certain units of work. As to the prices, they are the result of purchases of those materials made personally by me covering an equal number of years.

Q. Referring to the cost of cement in the construction of the plant of the company here, have you laid brick in the ordinary way or a different way from the one ordinarily used?

A. In constructing the filter plant in 1894 we employed the masons we could get here in town and we had to practically teach them over again how to lay brick in the method that we required so as to get that absolute water tightness of the brick in certain parts of the works, and that style of finish, especially with the kind of brick we were using, which did not seem to be grasped by the local brick-

layers, and as a consequence the cost of this brick work occasioned by these reasons as well as the superior workmanship put into it, was greater than the ordinary price of brick work in this city.

Q. You have confined your last statement to the filter plant. Does it apply to any other work done by the company?

A. The same class of brick work as to materials used
1533 and workmanship, applies to all of the work that has been done under my charge to date.

Q. Do you think there was a reasonable necessity for the method of work and the uses of material that you have indicated in your last two answers?

A. I think there was for stability and economy in the after management, and questions of repair particularly.

Q. I will ask you to state again the cost of brick meter boxes?

A. Brick meter boxes, by which I presume you mean those used around the larger meters, range in price dependent upon their size and somewhat on their location, from $20.00 to $40.00.

Q. Does the price you have just given include the metal top with a brick meter box?

A. Yes, sir, in the large range that I have stated for these it would, although these metal tops are larger and of a higher price, running from $5.00 to $6.00 each, than those stated in the tabulation furnished, which is intended to cover only those of the ordinary size.

Q. You have stated that prior to a certain date the services or service pipes were put in by plumbers at the cost of the consumer, as I recollect. What date was that?

A. My statement was that prior to April 1, 1895, the services were put in at the expense of the consumer, but so far as I know plumbers have not put in service pipes, so far as the tapping of mains are concerned and running the pipe to the street line since December 31, 1891.

Q. Do you know what the plumbers charged prior to December 31, 1891, for putting in these services?

A. Their regular price was $8.00 each, which however did not include the stop and waste placed just inside the property line as is
now done by the Water Company which is available for the
1534 consumer's use, nor it did not include service pipes where rock was encountered, nor any other unforeseen difficulties.

Q. Do you know about what the stop and waste would cost in each case?

A. The stop and waste, including the box and the rods to operate it by, costs the company at the present time $1.55 outside of the labor in putting it in place; this being for material alone.

Q. Now in the analysis made by you and Mr. Wheeler, did you adopt a uniform invariable rate of $8.00 each for these services?

A. We did.

Q. Please look at Exhibit #5 to Elbert Wheeler's deposition, and say whether or not the prices set out there include freight?

A. My understanding is that the Empire meters listed herein are delivered f. o. b. Knoxville at these prices, but that the other meters

are f. o. b. factory, but in none of the Empire meters, in the price given, is included connections.

Q. Now has the freight, in the cases where you were to pay it, been added on to that estimate there?

A. No, sir, as this is simply a transcript from the Treasurer's books of the bills paid to the various meter companies.

Q. Is anything except the freight charge omitted in the case of the items listed on Exhibit # 5 to Elbert Wheeler's deposition?

A. Some of these meters included connections,—in fact I should say that all perhaps, before April 1st, 1900, included connections, while all purchases since April 1st, 1900, are the prices without connections.

Q. If it is not objected to as secondary evidence, I will ask
1535 you to look to the deed of the Lonsdale Beaumont Water Company for the 14 acre Tillery Spring tract, and state what the consideration recited therein as paid by the Lonsdale Beaumont Water Company was, and if the question is objected to in that form, I will ask you to file a certified copy of the deed as an exhibit to this deposition?

A. The consideration named in deed November 8, 1892, of D. S. McIntyre, *et als.*, to Lonsdale-Beaumont Water Company is "$500 *and other good and valuable consideration,*" while the consideration named in deed dated July 2, 1891, of the Tillery Springs Land Co. to D. S. McIntyre, *et als.* for the same property is $5,760.00.

Q. Mr. Kimball, is the high service of any benefit to the old city of Knoxville, or capable of being of any benefit to the old city?

A. My judgment would be that it most assuredly is.

Q. Can you indicate briefly in what way?

A. It already supplies certain hydrants for fire purposes in the old city, giving to them a pressure sufficient to operate without the use of steamers, and can be made of equal benefit over the entire portion of the old city to an extent, allowing the city to do away, if they choose, with their steamers in case of fire.

Q. Is the high service of any use in operating your filter plant?

A. The high service is very essential in the operation of the filter plant, particularly in washing out certain portions of them, and in the absence of such high service, it would be necessary to operate and maintain an independent pump for this particular purpose.

Q. Anything said in your contract with the city of Knoxville, made in 1882, about filters?

A. Nothing to my knowledge.

Q. Why was the filter plant erected?

A. The filter plant was erected as a large number of improvements were carried on for the purpose of giving the City the
1536 best water and water system that could be devised and built.

Q. Has any objection ever been made to the construction of the filter plant to the Water Company?

Mr. PICKLE: I object to that. The only way the City can act in those matters is through its City Council.

COMMISSIONER: I sustain the objection.

Q. Would the pipes now used for high service be used for low service if the high service wasn't provided?

A. All of the pipes now used for high service would be used for low service except a very few in the highest portions of North Knoxville to which the low service would not supply water, and a few also on Beaumont ridge likewise situated?

Q. Does the proper conduct of the business of the Water Company required the maintenance of an auxiliary pump at the pumping station?

A. It does to provide assurance against a break-down of the main pump, and also to operate when it is necessary to make repairs upon or do any work in connection with the main pump.

Q. Is the auxiliary pump in any way connected with the high service system, or would it be needed there independent of the high service?

A. It would be needed independent of the high service, and has no connection whatever with it.

Q. Mr. Kimball, what has been the effect upon economy of operating the system in West and North Knoxville of raising the stand-pipe on Reservoir hill 20 feet as it has recently been raised?

1537 A. It has resulted in reducing the coal consumption at the high service station nearly one-third; so that with the stand-pipe raised, it is possible to pump the same amount of water and do the same service substantially with two-thirds of the coal expenditure as was necessary when pumping through the long line of main to the west standpipe. It has also increased the storage available as well as by allowing an increase in the speed of the pump thus doing the high service pumping in a much less time and at some reduced cost for labor as compared with the expense when pumping into West Knoxville direct.

Q. What has been the effect, if any, upon the pumping machinery itself?

A. It has very much reduced the strain upon the pumping machinery and brought it more nearly to its normal work for which it was designed.

Q. If there was no standpipe on Reservoir Hill how could you clean the filter settling basins?

A. It would be necessary to have a pump to create enough additional pressure to wash these settling basins were there not a supply otherwise available which, should the high service, or in other words the standpipe, not be there would be the fact.

Q. In the analysis made by you and William Wheeler, did you estimate pipe weights in West Knoxville and North Knoxville as being the same as the pipe weights in the old city?

A. We did, yes, sir, if you mean by that the weights of the pipe in the old city as laid since 1891.

Q. Since you have referred to the pipe book, what do you find to be the actual fact as to the weights of the pipe in West Knoxville and North Knoxville?

A. The pipe book does not show the weight of the pipe in
1538 West Knoxville. It does however, show that the pipes in North Knoxville are slightly heavier than those laid in Knoxville since 1891.

Q. Now please look to the analysis where it treats of the West Knoxville pipe system and see if you do not state there, while you estimate the weights as being the same as those in the old city that you find as a fact that they are somewhat heavier in West Knoxville than in the old city?

A. We were informed that the weights of the pipe in West Knoxville were heavier than our weights.

Mr. PICKLE: We object to the statement as purely hearsay.

COMMISSIONER: What is the source of your information, Mr. Kimball?

A. My information comes from a gentleman, an assistant of mine for a good many years in Knoxville, Mr. J. C. Wright who was employed by the town of West Knoxville as an inspector of their pipe system, and who was familiar not only with their system but also——

Mr. PICKLE: Then he would be the man to prove that by and we would have his sworn statement.

COMMISSIONER: I think the objection is good.

Q. Reference has been made in your testimony, Mr. Kimball, to the change of teeth of the filters. Do you remember whether that was done at the cost of the company or not?

A. The installation of the four additional filters in 1897, at which time the teeth on the original ones were changed, was done when I was absent from Knoxville, and I can only state my conclusions as regards this from matters of correspondence and contracts which may have come under my observation at that time and away from Knoxville.

Q. Do you know personally, or from the books of the company whether any charge was made for that or not?

1539 Mr. PICKLE: He has stated that he don't know personally; now he states that he has some correspondence; let us have the correspondence.

Q. Do you know personally from the books of the company that was done at the cost of the company?

A. My understanding from the books of the company——

Mr. PICKLE: I don't want his understanding; I want what the books show.

A. I should not care to state positively without refreshing my recollection by looking to the books.

Mr. CALDWELL: Then we will go to something else as that is a matter easily established.

Q. You have referred to cases in which maximum water rates were charged to a number of consumers. Were such charges made at the option of the consumer, or forced upon them?

A. They were made entirely at the option of the consumer.

Q. Have you any customer who is as large a consumer as the Southern Railway Company?

A. We have none.

Q. Do the terms of the Southern Railway Company's contract with you as stated by you, apply to high service or only to low service?

A. It applies only to low service, the contract stipulation as regards high service being that they shall pay regular schedule rates for all water used through and from the high service.

Q. When was that contract with the Southern Railway Company made?

A. That contract I think is dated August 1st, 1901.

Q. How long does it continue?

A. It runs for five years.

Q. Does it or not bind the Southern Railway to take water from the Knoxville Water Company exclusively?

1540 A. It binds them to take all their water for that period from the Knoxville Water Company that they use in or near the city of Knoxville, with one slight exception, a water tank on their belt line near Third Creek which is supplied by gravity by a spring in the vicinity, but which is seldom if ever used.

Q. Did you secure any additional right of way anywhere by making this contract with the Southern Railway Company?

A. We secured a right of way along what is known as the Knoxville & Ohio road from the limits of the city to the property of the Lonsdale Land Company.

Q. In the examination of William Wheeler, call was made by counsel for defendant for certain plans, &c., of the buildings of the Knoxville Water Company to be used in examination of the same by an expert for the city. I will ask you if those plans have been brought to Knoxville?

A. Certain plans have been brought to Knoxville since that date and with others that are here have been listed, embracing a total of 165 plans, indexed as follows:

1541 *Schedule of Plans of Buildings, Machinery and Other Constructions of the Knoxville Water Company from Office of the Supervising Engineer and on File in the Knoxville Office.*

River Pumping Station.

	Office file No.	
	Sup. Eng. office.	Knoxville office.
Buildings:		
Original Pump Station (5 sheets)—1893	62	36
Cross section of lot from Craig St. to river—1893	32	61
Pump House, suggested plan of engine room and basement—1894		54-A
Pump House, approved plan of engine room and basement	82-A	54-B
Pump House, southwest elevation	82-I	54-C
" " southeast "	82-J	54-D
" " northeast "	82-K	54-E
" " vertical section	82-H	54-F
" " roof framing plan	82-C	54-G
" " details of truss over engine pit	82-G	54-H
" House details of basement windows	82-F	54-I
" " first story framing plan	82-B	54-J
" " plan of flooring	82-D	54-K
" " second story framing plan	82-E	54-L
Bulkhead between pump and screen wells—1894	66	119
Masonry details of pump and screen well—1894		111
Boiler room and proposed roof truss—1895		75
River retaining wall—1895		107
Substitute for boiler room roof truss—1895		121
Coal bin, coal chute and reconstructed boiler room—1895	75-A	108
Cross section of river front—1899	95	46
Proposed general location of coal scales—1899	91	51
Detailed plan and profile of coal scales—1899		52
Location of coal scales, with contours—1899		40
Reconstruction of engine pit for Worthington pump—1900		89
Machinery:		
Deane Pump condenser and discharger—1894	72	82
Deane Pump foundation stones—1894		47
" " piping details—1895		43-A
" " basement platform		43-B
" " counter attachment		43-C.
" " air tank		43-D
" " cap irons		43-E
" " feed pump and receiver		43-F
" " upper foundation		43-G

	Office file No. Sup. Eng. office.	Knoxville office.
1542 Machinery—continued:		
Deane Pump air Chamber		43-H
" " lagging		43-I
" " vacuum pump		43-J
" " suction piping		43-K
" " arrangement of machinery		43-L
" " general piping plan		43-M
" " bottom foundation		43-N
" " basement foundation		43-O
" " condenser		43-P
Proposed 66" x 18' boiler and setting (single plan)—1895		87
Proposed 66" x 18' boiler and setting (double plan)—1895		88
Worthington Feed Pump and auxiliary heater—1896		117
Details of 66" x 18' boiler—1897		68
Worthington vacuum pump, piston valve motion—1898		19
Worthington jacket tank and feed pump—1899		5
Worthington pump, general arrangement of machinery—1900		116-A
Worthington Pump, general arrangement of condenser, heater, etc		116-B
Worthington Pump, general arrangement of main engine		116-C
Worthington Pump, general elevation		116-D
" " intermediate cylinder		116-E
" " low pressure "		116-F
" " high " "		116-G
" " water cylinder		116-H
" " valve motion		116-I
" " steam and exhaust pipes		116-J
" " exhaust heater		116-K
" " link rods		116-L
" " condenser		116-M
" " cross exhaust		118
" main pump foundation—1900		90
" " " suction and delivery pipe 1900		96
" foundation stones		70
Pipe connections between old and new force mains—1900		77
Pipe connections for air discharge (Deane pump)—1900		77-A
Induced draft arrangement—1900		85
Hawley Down-Draft furnaces—1900		98
Worthington steam separator—1901		110
New boiler rooms, showing location of boilers, flues, etc.,—1902		65

	Office file No. Sup. Eng. office.	Knoxville office.
Intake tower:		
General plan showing location of proposed intake chamber—1899	96-A	112 (*a*)
Profile of proposed intake chamber—1899	96-B	112 (*b*)
Outline map of Pump Station vicinity—1899	96-C	112 (*c*)
Tennessee River at Pumping Station—1899	96-D	112 (*d*)
1543 Intake tower—continued:		
Intake Tower coffer dam—1900		41
" " plan and section—1900		86
" " portholes and gratings—1900		83
Ejector supply and discharge connections—1900		101
Porthole gates—1900		92
Coffin Gate plan—1900		81
Foot bridge—1900		91
Ejector detail—1900	110	97
" connection—1900	110-A	94
Gate stands—1900-1901	107	84
Ejector suction and washout nozzle—1901	134	102
Screens for intake tower and screen well—1901	115	99
Force main:		
Plans and profile, showing changes at Front St. and cross-over connection at Pumping Station	87 75 73	55
High Service and Filter Plant.		
Buildings:		
Filter House floor plan—1894	41	57-A
" " " " of filters	40	57-B
" " front elevation	42	57-C
" " side "	44	57-D
" " " "	43	57-E
" " rear "	45	57-F
" " roof framing of boiler and coal shed	47-A	57-G
" " plan of roof trusses	47	57-H
" " elevation of roof trusses	48	57-I
" " " " " "	49	57-J
" " " " " " "	50	57-K
Drive-way and details of drains—1894		66
Plan and detail of original settling basin—1894	41-A	27-A
Section of original settling basin showing mud stop	41-B	27-B
Section of original settling basin showing mud stop and alum pump	85-C	27-C
Section of filter house and plan of alum tanks	85-*d*	27-D

	Office file No.	
	Sup. Eng. office.	Knoxville office.
General arrangement filter house and high service pumping station	85-*b*	27-E
Chimney for station—1894	56	44
Cross section of original settling basin wall—1894	41-C	28
Modified detail of spillway—1894	41-E	93
First addition to settling basin—1899	97	63
Second " " " " 1901		64
New standpipe foundation—1901	35	131
	131	

High Service and Filter Plant.

1544 Machinery:

Manning Boiler		113
Proposed arrangement of high service pump—1894	55-A	11
Foundation and stones for high service pump—1894	58	48
Horizontal boiler for high service pumping station—1896	81	114
Standpipe:		
Plans, sections and details of addition to standpipe foundation (2 sheets)—1901	35	131
	131	
Miscellaneous:		
Proposed pipe lines over Clinch St. bridges—1900		30
Steel bridge for 16" pipe line over 1st. Creek at Clinch St. (4 sheets)—1900	99-A	71
Level or grade map of Knoxville, with contour at grade 180		67

General street plan, on scale of 500 feet to the inch and sectional street plans, 33 in number, making 34 in all, of the Pipe Lines of this Company. Referred to on Page 474 of William Wheeler's deposition.

1545 Mr. CALDWELL: In compliance with the directions of the Special Master made at a former sitting, we tender these plans for the uses of the defendant indicated by the Master in his order.

Recross-examination by Mr. PICKLE:

Q. I believe you stated that the cost of taking up old wrought iron pipe was equal to if it did not exceed the value of the pipe after it was taken up, did you not?

A. I made that statement, yes sir.

Q. Then why was it taken up at all if you laid new pipe in other ditches?

A. It was taken up to disencumber the streets of pipe, and to make sure that no connections on this old pipe had been left on it and not changed over on to the new pipe, and to get out of the streets useless material.

Q. Well it lay three feet under the street didn't it?

A. Not all of it, no sir. Some of it was six inches and others of it was at a greater depth.

Q. Well it ought to have been more than six inches from the surface, if properly laid, shouldn't it?

A. I simply stated what we found there.

Q. Well it ought to have been more than six inches from the surface if properly laid; have you laid any pipe within six inches of the surface?

A. No sir, we have not.

Q. How deep do you lay pipe?

A. Our main pipe is laid three feet to the center, with not less than two feet and a half of cover.

Q. And that is the general rule for laying pipe?

A. That is our general rule.

Q. Well isn't that the general rule of laying like pipe?

A. That rule is variable according to the location and the
1546 judgment of the parties having it in charge.

Q. You state that you think your brick work was better than any that was ever done in Knoxville; it was done by Knoxville masons, wasn't it?

A. I did not make that statement sir. My statement was that in my judgment it was better than the average.

Q. Then all you mean to say was that it was good work?

A. It was very good work, yes sir.

Q. Well of those larger meter boxes, there are very few of them in Knoxville?

A. They are over meters of 4 inches and larger, and comparatively few of them.

Q. I believe you hav-n't stated the prices paid for connections for meters when bought separately; what is it?

A. For the smaller, or domestic size, we have been paying recently 30 cents plus freight from Decatur, Illinois which amount from 3 to 5 cents on a connection.

Q. Is that price subject to any discount?

A. None sir, except a discount of 2 per cent. for cash if the bills are paid within ten days.

Q. The bills were paid within ten days, were they not?

A. I cannot state as to that, that being a matter within the province of the Treasurer. I will state that I have known some of them being paid within ten days, but I cannot testify as to all of them.

Q. How long will the amount of water you can store in the stand-pipes last, if the pumps are stopped?

A. Not only to that part of the city which is supplied by the stand-pipes, but the entire consumption?

Q. Yes sir.

A. The city of Knoxville is now using from two and three-fourths

to three million gallons of water a day. The East stand-pipe
1547 holds 515,000 gallons and the west stand-pipe about 225,000 gallons of water, and the sum of the contents of these two stand-pipes into the total consumption of the City will answer that question.

Q. You have stated in your re-examination that your books from which you seem to have had memoranda, or the books themselves show the weight of the North Knoxville pipes. I will ask you to look to the book and see if it shows the price?

A. It does not; it is a construction record book and shows certain items of construction without regard to cost.

Q. Then you have no book that will show the price paid for it?

A. No sir I have not.

Q. Mr. Kimball, isn't it true that some of the rates fixed by the new schedule that is being contested in this case are lower than the regular rates of your company?

A. They are all lower so far as I recall.

Q. Now let us see if some of them are not higher; ain't it a fact that some of them are higher?

A. I do not at present recall any.

Q. Well you testified in the case of the Knoxville Water Company, in error against the Board of Mayor and Aldermen of Knoxville while it was pending in the Circuit Court at Knoxville?

A. I did, yes sir.

Q. And didn't you so state in your testimony in that case?

A. I don't think that I did.

Q. I will ask you if you didn't make this statement and if it is not a fact that one of the rates that was litigated over in that case didn't turn out to be a higher rate than the rate fixed by your own company. The questions and answers are as follows: "Q.
1548 Were charges rendered against him (that is McClure who was the prosecutor in the case) for the quarter commencing April 1st. and ending June 30th. in accordance with the Lonsdale-Beaumont contract? Mr. Turner: I object to this question because it is immaterial to the issues in this case. The Court: He may answer. Mr. Cates: I ask you what amount he paid you for that quarter? Witness: On Yale Avenue house? Mr. Cates: Yes. Witness. $3.60. Q. What would it have been under said ordinance? A. Under the ordinance as published in the paper it would have been $3.85. Q. And by said ordinance you mean this alleged ordinance of March 30th. 1901? A. Yes sir. Q. The ordinance published in the paper on March 31, 1901? A. Yes, the one that is published or was published in the paper of March 31st, 1901."

Q. Now I will ask you if in point of fact this particular rate of the city ordinance of March 31st. 1901 didn't turn out to be higher by 15 cents than your own rate on the same property?

Mr. CALDWELL: Have you a certified record of the proceedings?

Mr. PICKLE: I have a record of the Supreme Court of the United States.

Q. Didn't you so state in that case?

A. To answer that question I shall have to go into an explanation. I have a distinct recollection of so testifying, and for this reason. A certain rate, as quoted there of Mr. McClure's in West Knoxville was charged under the schedule at $4.00, which was a higher rate than the city's rate; he paid $3.60, there being a 10% allowed for prompt payment. So that my former testimony as compared with this particular case where I stated that the city's rate wasn't higher than the Water Company's schedule, is correct.

1549 Q. So it is a fact that in that particular service the city's rate was $3.85 and the rate which you collected was $3.60?

A. The amount which we collected was $3.60 on a schedule rate of $4.00, as compared with a schedule rate of the city's, as you state it of $3.85.

Q. Now I will ask you if that is not true of a number of other services?

A. I cannot state sir, whether it is, or is not. Had the discount been taken off the city's schedule as was from our schedule, it would in this case have made the city's rate lower than ours, and I can see no comparison in applying a schedule on which there are certain discounts and a schedule upon which the same discounts are not applied.

Q. Are there not a larger number of services in the city that the charges on which are higher under the city's ordinance in question than under your schedule in force, if you compare with the city's ordinance the amount actually collected after discount and in the case of your own ordinance and apply no discount in the place of the city's ordinance.

A. Taking the conditions as you state them I think there are some, but not many, in fact very few so far as my knowledge extends.

Q. Have you examined the books with reference to that matter?

A. To some extent, yes sir.

Q. Have you gone over them so as to inform yourself on that point?

A. To some extent.

Q. Can you give a list of the services that would be higher under the city's ordinance, under that hypothesis than under your schedule?

A. With the discount taken off?

Q. Yes sir.

A. No sir I cannot, for at times people do not take ad-

1550 vantage of the discount and it would be an absolute impossibility to assume that certain would and certain would not or that all would or all would not?

Q. Isn't it a fact that nearly all of the water consumers do take advantage of the discount?

A. From 10% to 20% of them in number fail to take advantage of it.

Q. They are they smaller consumers ain't they?

A. Not wholly.

Q. But chiefly?

A. I cannot state positively.
Q. What per cent. in charge fail to take advantage of it?
A. I cannot state that.
Q. It is a much smaller per cent. than in number?
A. That I cannot answer.
Q. Hav-n't you looked to the books with that in view?
A. No sir I have not.
Q. Now didn't the particular case against your company for violation of the ordinance, prosecuted by Mr. McClure, fail upon your testimony, that you were collecting not more than the city's ordinance authorized but less, in the litigation in the Circuit Court?
A. The record will show whether it did or not.
Q. Now Mr. Kimball lets go to this Southern Railway contract you say it contracts for low service except for fire purposes?
A. I did not so state.
Q. Well then what did you state on that point?
A. I stated that the prices which I gave the other day as being in that contract were for water furnished through the low service, and that all water furnished through the high service was paid for at schedule rates, they having the option to use either at their choice.
Q. Are your schedule rates based on high or low service for consumers generally?
1551 A. The rates are not different one from the other except a difference in the present 10th Ward of the City of Knoxville from the rates of the City.
Q. Since you have spojen of the 10th Ward of West Knoxville your meter rates over there are higher than in N. Knoxville and the old city?
A. I have stated that, I think.
Q. How much higher?
A. I have already stated that the basing rate in W. Knoxville is 30 cents as compared with 25 cents in Knoxville, that is in the record.
Q. You have certain extraordinary or higher charges that you make for high service provided for in your schedule, haven't you?
A. We have none except as stated in West Knoxville as against Knoxville.
Q. But you have high service in N. Knoxville?
A. We do.
Q. And in parts of old Knoxville?
A. Yes sir.
Q. They are furnished at the regular schedule rates?
A. Yes sir.
Q. What is the difference in furnishing water in high and low service rates?
A. I cannot state sir.
Q. How much does it add to the cost of water to put on to it the high service rates?
A. I cannot state sir.
Q. It adds something don't it?
A. Undoubtedly.

Q. Are your rates not made higher on account of your high service?

A. Our rates are the same all over the City except as under the contract with West Knoxville.

1552 Q. But they are based upon a combination of services?

A. They are based upon the furnishing of water as we furnish it.

Q. Now you state that you got the right-of-way as a part of the consideration for your contract to furnish water to the Southern Railway at reduced prices; what was the value of that right-of-way?

A. In dollars and cents I can't state it.

Q. How long is it?

A. Well approximately, a mile and a half.

Q. Where situated with reference to the City?

A. Along the K. & O. Railroad as it leaves the City and goes toward the Lonsdale shops.

Q. And you would not fix any value upon it?

A. In dollars and cents, I stated that I could not.

Q. You can't make an estimate?

A. I have answered that question.

Q. Mr. Kimball, I will ask you if in the deed of William Wheeler and Charles F. Parks, conveying the North Knoxville Water plant and its properties to the Knoxville Water Company, bearing date 17th of November, 1893, there does not appear this clause: "And the parties of the first part (meaning said Wheeler & Parks) do further sell, assign and set over to the party of the second part (Knoxville Water Company) their right, title and interest in all the books of record and account, together with all contracts and accounts for water service made, acquired or possessed by them under and by virtue of their said contract with North Knoxville. * * *"

A. It so appears from the printed record of the Supreme Court which you now hand me, and I will compare the same with the original, if the original is in the office and reserve the right

1553 to correct this statement if found different.

The further taking of depositions was adjourned until Tuesday morning January 27th, 1903, at 9 o'clock A. M.

1554 TUESDAY MORNING,
January 27th, 1903—9 o'clock a. m.

The further taking of depositions resumed.

Next witness J. L. LUDLOW, of lawful age, called on behalf of the plaintiff, having been duly sworn, deposed as follows:—

Examination by Mr. CALDWELL:

Q. What is your age, and what is your residence, Mr. Ludlow?

A. Forty years of age; residence Winston, North Carolina.

Q. What is your occupation?

A. A Civil Engineer.

Q. Have you taken any College degree?

A. I graduated from Lafayette College, Pennsylvania in the year 1885 as a Civil Engineer and since that time have practiced the profession of engineering; principally Hydraulic, Sanitary and Municipal engineering.

Q. Have you been engaged continuously in the practice of your profession since 1885?

A. I have, sir.

Q. You speak of Hydraulic, Sanitary and Municipal engineering; are these three classes of engineering related?

A. Yes sir, they are closely related. I spoke of them separately, because the term Civil Engineering has such a broad meaning, including bridge building, railroad building, tunnel building, iron works and various undertakings controlling physical forces, while Hydraulic, Sanitary and municipal engineering is a common subdivision, and one of the specialty branches of engineering, which is frequently if not usually combined in the practice.

Q. Please state fully, but as briefly as is convenient what experience, if any you have had in the construction, maintenance
1555 or operation of Water Work plants?

A. Well I have been connected during my fifteen years practice of engineering, either as designing, constructing or consulting engineer with quite a large number of water works undertakings in the Southern states—something like twenty in number.

Q. Please give the names and state your connection with them?

A. Well as consulting engineer, I have been connected with the works at Raleigh, North Carolina, Charlotte, North Carolina and Goldsboro, North Carolina; and as designing and constructing engineer, I have been connected with several works in the State of North Carolina,—Rocky Mount, Wilson, Tarboro and Statesville; in Alabama at Huntsville and Eufala, at Columbus, Mississippi, Charleston, South Carolina and some others which I do not recall, but if necessary I can furnish.

Q. Have you ever been called to give testimony as an expert witness in water works litigation?

A. Yes sir, in the case at Chattanooga, Tennessee.

Q. What was the duty you were called on to perform in connection with the Water Works plant at Charleston, South Carolina?

A. At Charleston, I was first engaged to make a report upon the value of the existing water works plant, and afterwards to make the necessary investigations, and prepare plans and specifications for a new water supply for the city—an estimate of cost.

Q. Have these new water works been built?

A. No sir, they have not. The works are being built now on somewhat modified plans, the old company, by combination with other interests, are holding their franchise rights and improv-
1556 ing their works.

Q. In any of these cases in which you have been connected have you had occasion to give attention to the subject of capitalizing water plants?

A. Yes sir, several years ago, I was more or less interested in the question of financing water works plants but not to any active

extent. I never was classed as a promoter, and I never actually, on my own account, financed any water works proposition or investment. In connection with the Charleston Works as Consulting Engineer for the City Water Works Committee, I assisted in negotiations looking to the letting of a franchise for the Company, to building the works and the methods of the concessions and conditions necessary to securing the required capital to install the works.

Q. Do you think that you are qualified to give testimony as a witness of the class called "expert" in matters connected with the construction, operation and valuation of water plants?

A. I think so, yes.

Q. Did you hear the testimony of Mr. William Wheeler or of Mr. Frank C. Kimball in this case?

A. I did not.

Q. Have you read their testimony?

A. I have not.

Q. Have you been informed of the testimony that they have given in any way?

A. I have not.

Q. When did you first become acquainted with Mr. William Wheeler, the President of the Knoxville Water Company?

A. Early in November, 1902 when the case was first called.

Q. Had you, previous to that, had correspondence with Mr. Wheeler?

A. Yes sir.

1557 Q. In that correspondence with Mr. William Wheeler, did he furnish you any statements or estimates that he had prepared in connection with Mr. Kimball as to the valuation of this Knoxville Water Company's plant?

A. He furnished me what he designated as an analysis of the valuation of the Knoxville Water Company.

Q. About how long before the taking of testimony in this case began did you receive that analysis?

A. It was some time during October previous to the beginning of this case on November 10th, I believe was when the case was first called. It was some time during the preceding month that I received that analysis.

Q. Have you read the analysis?

A. I have.

Q. Have you examined it with a view to determining whether or not you can approve it as a method of reaching the result which we seek in this case?

A. Yes sir.

Q. With the permission of the Court, I ask you to read those portions of Mr. William Wheeler's examination in chief in this cause, both when he first testified and when he was recalled, in which he sets out his analysis of the property and states its fair invested value, first down to March 31, 1901, then to March 31, 1902 and then to September 30, 1902, and to state whether or not the testimony given in the pages of the deposition which I shall indicate is identical in substance and effect with the analysis fur-

nished you by Mr. William Wheeler to which you have referred above. The pages to which I refer you are:

First. Beginning on page "23" of Mr. William Wheeler's examination in chief to middle of page "115" and from top of page "129" to page "166-H."

Second. Beginning on page "479" and continuing to and including page "488."

1558 *Third.* Beginning on page "498" to "508" inclusive.

Fourth. Pages "511" and "512."

A. Yes sir, they are identical in substance and effect.

Q. As further qualifying you as to certain parts of the deposition of William Wheeler to which I have referred you, I will ask you if the original analysis handed you brought the calculation further down than March 31, 1901?

A. It did not.

Q. Was the continuation of the analysis to September 30, 1902 subsequently handed you?

A. There was something purporting to be that; I do not know that it was complete.

Q. I wish to ask you first in regard to this analysis, Mr. Ludlow if in your capacity of an expert witness you regard the general method adopted by Mr. William Wheeler in analyzing, classifying and valuing the property of the Knoxville Water Company as a proper one and in accord with the principles of Water Works Construction and Operation?

A. I do.

Q. Have you at any time made an actual examination of the properties of the Knoxville Water Company?

A. I have, practically of all the visible parts.

Q. Have you been familiar with the prices of cast iron pipe, cement, cement mortar, various kinds of brick, prices of brick work, prices of ditching, relaying street pavement, prices of water meters and connections and attachments, valves and other appointments of a Water Plant for any considerable time?

A. Yes sir, for several years.

Q. Have you examined the unit prices fixed by Messrs. Wheeler and Kimball in their analysis of the Knoxville Water Com-

1559 pany's plant with a view to determining in your own mind whether or not they are fair?

A. I have.

Q. Were there instances in which your judgment as to unit prices varied from those fixed in the analysis?

A. Not very many, or much; practically none. Speaking as a whole I think the unit prices are entirely fair and reasonable in my judgment.

Q. How long and to what extent have you been familiar with the prices of cast iron pipe, such as is used in a plant of this kind?

A. I think I have kept up with those prices as far as it is possible for any one to do in general engineering practice, for a period of not less than 10 or 12 years.

Q. Do you recall the fact that the prices assigned to piping in the analysis varies from year to year?

A. Yes, I recall that variation.

Q. Generally speaking, and without going to the prices assigned to piping for any particular year, I will ask to what extent the prices assigned in the analysis correspond to your own judgment as to the fair prices for the several periods indicated in the analysis?

A. I do not think I could make any material change for any particular year.

Q. To what extent do the prices assigned to such appointments of the plant as meters and valves correspond with your judgment?

A. I think they are very fair and reasonable prices as of the times considered.

Q. Suppose Mr. Ludlow that you had been called upon, or that you were called upon now to state the construction cost of the Knoxville Water Company's plant from the year 1883 down
1560 to the present time and that there were no books of account from which you might ascertain actual payments or actual cost, how would you go about preparing a statement of the kind supposed to be called for?

A. I think the method pursued in this analysis of Mr. Wheeler to be the most rational, direct and accurate way of determining the investment value of the plant. In fact, I think it is practically the only way that investment value could be determined.

Q. Without going into the subject of replacement at present, I will ask you whether or not you make a distinction between investment value or invested value and cost of replacement?

A. I think there may be a very wide difference in those two results owing to the constant change in the cost of materials of various sorts that enter into the building of water works plants.

Q. Confining your attention for the present to the subject of invested or investment value of the plant, I will ask you if it is proper in making an estimate of such value to include anything for engineering expenses, and if so, what?

A. It is very proper to allow for engineering expenses. The matter of *how much* is somewhat indeterminate, except as an approximation. The engineering expenses of designing and supervising construction of water works plants might vary from 4% to 10% of the cost of the works according to its size and how much interested the engineer might be in performing the service.

Q. What is the usual rule?

A. There can hardly be said to be any rule. I think the usual engineering cost of water works installation is somewhere in the neighborhood of 5%, though in a great many cases, as much as
7% or 8% is paid strictly for engineering services as engi-
1561 neering fees.

Q. Is an allowance for contractor's profits proper in such cases?

A. It is.

Q. Suppose Mr. Ludlow that a water plant is begun the first of *January* of one year and completed and put in operation the first

of January the next year, which means that the capital invested in the plant earns no profit whatever during that period. Should any allowance be made to the Water Company, the investor, on account of the fact that its capital remains thus unproductive for a term?

A. Yes sir.

Q. The amount allowed in the analysis or in the deposition of William Wheeler for that purpose is three per cent. To what extent do you approve that allowance?

A. I think it rather too little than too much. I think prudent business men, in an undertaking of that character, before undertaking the expenditure in a work that involves the investment of a certain amount to bring about completion and return for the money invested, would be careful to have an amount sufficient to complete the works practically in hands before the expenditures were begun. If such course were followed, then the total cost of the plant would be unproductive for an entire year, and the interest allowance should be, if not for the entire year, very nearly so. The reason that I assume that it might not be for the entire year, is that the funds may be made available, and in such condition that they can be secured when needed, and they may draw some interest or have some other earning capacity for a portion of the time during construction, but it is hardly probable to have as much as one-half of the year or one-half the time of construction. Therefore I would think that three per cent. is rather too small allowance on that account.

1562 Q. I ommitted to ask you and will ask you here what would be a fair allowance in percentage on money expended in construction for contractor's profit?

A. That would vary at different times, under different conditions and with different contractors. I think as an average that a fair allowance should not be less then 12% not more than 18% to 20% and that I should take 15% to be a fair reasonable allowance under average conditions and circumstances.

Q. Assume Mr. Ludlow that there are expenses of an administrative and executive character necessary in the conception organization and constructive administration of water works plants of this kind, which are not compensated and are not contained in the primary construction cost of the physical plant, in addition to engineering expenses, contractor's services, &c. and including such things as legal services and expenses, charter and franchise charges and allowances, negotiation of contracts and general contingent expenses not compensted in salaries or charged to operation or maintenance. Should an allowance for such items *of* these be made in estimating the value of a plant in a case of this kind. I define these services by the general name of "administration services"?

A. In your designation of a case of this kind, I understand it to mean a case where the possible revenues to be derived from the works are limited to only a reasonable return on the money invested. I think very emphatically that an allowance of the character you have mentioned should be included in the investment cost of the works. On the other hand, if the profits derived were unlimited, it would be immaterial whether such allowances were made or not, as the parties

might be willing to incur that expense freely with a view of
1563 getting large returns in the future thereby.

Q. Suppose that a water works plant of a given capacity and cost existed in Knoxville today with an income of $100,000.00 and that there were completed in the same city at this date a new water works plant beginning operations today, identical in appointments and physical value, and without any income; looking to the principles applicable to a case of this kind, would these two plants be of the same value. And as supplementing the question, I will ask also if there would have been any difference in the cost of the two supposed plants referred to in my question?

A. To an investor proposing to purchase either one or the other of the water works plants, the plant being in operation and with a fixed income would be of somewhat greater value than the new plant just completed, though the new plant may have cost more in its physical construction than the older plant with the revenue,—or the older plant may have cost more than the plant completed today. So that to the investor examining the two plants with a view to purchasing as an investment, would practically disregard the cost of the erection of the two plant , and the controlling influence in his mind would be that one plant was yielding a profit or income and the other was not.

Q. Does it cost anything to build up a business for a water plant?

A. It usually does, yes. There are very few water works plants established anywhere, I am well satisfied, that pay for the first year or two, and in many cases for several years. They are not what might be called paying properties, and when such is the case someone has to father the enterprise and put up any deficit that may
1564 arise from year to year and in that way there is a cost attached to the bringing up of a water works plant to a paying condition.

Q. Is there a term in use among gentlemen of your profession as applied to a corporation, to-wit: "Going concern"?

A. That is used to designate the difference I have just recited between two different works, the one whose income was $100,000.00, assuming that that is sufficient to pay all operating expenses and yield some interest on this investment, is said to be a "going concern" or to have a going value, whereas the new works is an infant and has not been brought up to the conditions of a "going concern."

Q. What does a water works engineer mean by the term "maintenence" as applied to a water works plant? What expenses in other words are properly included under that head? I do not mean to have you specify the items of expense, but only to define the classes of expenses generally?

A. All expenditures that are required in the repairs and slight renewals such as are essential to the economic operation of the plant, and keeping it up to its proper standard of efficiency, should be considered as a maintenance account.

Q. Would you limit it, as I understand you do to renewals and repairs?

A. Well I think that covers everything, yes, except there would be

some merging of maintenance and depreciation account, if maintenance may be construed to include everything that might otherwise be placed in depreciation account, in that event it would mean everything in the way of expenditures, replacements as well as renewals and maintenance.

Q. Suppose that the Knoxville Water Company has not, up to this date, earned any profits above the fixed charges of interest and operation and that such impairment or depreciation as has occurred
1565 in the property, has of necessity been met by the investment of new capital, and it has been able to set aside no fund for the current impairment or future renewal of the plant now in use; against what would you charge the new capital invested or the expenditures met for the purposes indicated in this question?

Mr. PICKLE: Counsel for defendant objects to the question as calling for the witness'es opinion upon what is a matter of law or legal deductions.

Over-ruled by the Commissioner.

A. It would be a portion of the cost of the works, or the investment account represented by the works. I would thus consider it for the reason that in the use of the plant from year to year there is a certain amount of natural depreciation, wear and tear, which cannot be met by ordinary renewals and maintenance. This depreciation is a necessary condition to the service performed by the water works company and thus represents an actual loss to the capital invested originally. If this loss cannot then be returned from current earnings or from some previous surplus, it becomes a liability against the water works property and a debt to some one, namely: the stockholders or managers of the property and to the works itself as a corporate entity it clearly represents an investment as of money borrowed from the person or persons who originally financed the works and are carrying the burden of building it up to a profit paying property.

Q. Assuming that the financial condition of the water company continues to the end of its contract with the city, and that depreciation continues, as it necessarily must, until that same time; that is to say, that all depreciation in the future is made good by the
1566 investment of new capital would such future investments be entitled at the end of the term to be charged against the capital or investment account of the company?

General PICKLE: I object to the question as calling for the opinion of the witness on a matter of law and of legal deduction.

Objection over-ruled.

A. They would, yes.

Q. Suppose Mr. Ludlow that the conditions assumed in the last two questions, to-wit: That all renewals and repairs are met by new investments of capital for want of earnings until the company ceases business; would the company then have anything left except its naked plant, and would it have anything whatever that would represent the impairments that had accrued on that plant from the beginning down to that time?

A. It would have, in that condition, an augmented investment,

that is the investment would be increased to the extent of the amount that had been found necessary to keep the plant in such state of repair by renewals as to enable it to conduct its business for the purposes intended. A water works plant as I conceive it, should not be understood as having its life terminated, but that rather such increased expenditures as may be found necessary to keep the plant always in condition to do business, is necessary, and unless the earnings from the plant are sufficient to provide the funds for these renewals and the preservation of the plant in its proper condition, then the money for this purpose must be furnished by the investors in the property, and cannot be considered otherwise than as an increased investment.

1567 Q. Supposing Mr. Ludlow that past depreciation provided for in the manner you have indicated is left in the capital account, what amount should be allowed in the future to provide for repairs and renewals and to cover current depreciation; I mean what amount per annum, assuming that it has been left in capital account up to that time?

A. Then there should be an allowance of not less than 2% per annum on the value of the works; that is I consider depreciation to be at the rate of 2% per annum. That however must be presumed to be invested so that it will be compounded, otherwise that will not be sufficient allowance to meet depreciation account.

Q. Does your experience suggest that water works bonds are always salable at their face value?

A. It does not,—rather the reverse. I cannot speak from positive knowledge but my opinion and judgment is that very few of the water works plants that have been promoted in recent years, have been able to dispose of the securities at face value.

Q. Suppose you were called upon to estimate the cost of marketing, for the purposes of water works construction, a given number of water-works bonds. Would you make any allowance for the cost of marketing them, and if so what do you think would be a fair and reasonable cost?

A. I would do it in one of two ways; either make the rate of interest bearing securities very high, higher than the ordinary securities require, or allow an underwriter's commission for placing the securities. The result is the same in the end in either one of those two ways. If the interest bearing securities are of the same rate or of the average rate of bonds or other evidence of indebtedness, I should think it would be necessary to count on paying 10% at least

1568 to the underwriters of those securities in order to have them placed. The same result might be accomplished however by issuing a bond bearing a higher interest rate. The ordinary rate of interest above mentioned for water works securities, will vary in different sections of the country, depending upon the local laws and protection of water works securities. In states, for instance the state of Pennsylvania where the private ownership of water works plants is thoroughly safe-guarded, a water works bond could be marketed bearing a very much lower rate of interest than one in a southern state, where the credit is not so good and the laws do not

so zealously protect such investments; or in another case where the earnings of water works plants are limited by law, the bond to be successfully under-written would require a higher rate of interest than in one of the states where the laws are more favorable to investments of that character. I should give as my opinion of the necessary rate of interest on securities as above indicated in the states of Tennessee, North Carolina and Georgia or other Southern states—in some of the larger cities of these states—a 5% bond. In smaller cities, such as Knoxville and Chattanooga, not less than 6%, and that bond on water works properties bearing those rates of interest, to be marketed, would necessarily require an underwriter's commission.

Q. How long have you resided in the Southern States, Mr. Ludlow?

A. Sixteen years. I should like to answer further in response to a suggestion of the Court that water works securities are not considered in the financial market as a good security as compared with the usual offerings of bonds or other evidence of debt of industrial enterprises,
and they require a higher rate of interest than some others
1569 in order to be negotiated.

Q. You have testified above as to certain items and percentages that are, in your judgment, properly chargeable to the capital or investment account of a water plant. I ask you now to state in general terms, as a matter of business what a water company is entitled to be paid out of its earnings, including operating expenses, if that be a proper one, and such other general items of that kind as you think proper?

A. I think in the beginning the cost of the works should be established, including in the cost every item of expense of whatever character that had been found necessary to have the plant installed and ready for business. This cost should include the cost of financing the securities, of legal expenses, of reasonable administrative charges on the works. Having determined the net cost of the works, the revenues should be sufficient first, to pay operating expenses, in which I would include the salaries of the Superintendent, bookkeepers and all persons necessary to the operation of the works, also reasonable salaries for the administrative officers of the company. Then there should be set apart from the earnings, an amount of not less than 2% per annum of the cost of the plant as depreciation account for the purpose of renewing and replacing the various parts of the plant as its period of usefulness might expire. There should next be set apart from the gross revenues, a reasonable rate of interest upon the original cost of the plant, as determined by the method already indicated. In event the revenues had not been sufficient to meet all these requirements and there had been a deficit from year to year, either in interest account or depreciation account
the interest allowance on the cost should include the amount
1570 of these deficits as well as any deficit there might have been
in the operating expenses of the plant. Another item for allowance should be classified as "maintenance and renewal account," under which heading should be included every expenditure that is found necessary from time to time to renew or replace the minor

parts of the plant and keep the same in condition for successful and efficient operation. Summarizing and placing these allowances in proper order I should put first, Operating expenses, Maintenance account, Depreciation account and Interest on investment. In lieu of depreciation account there might be set apart from the revenues a sinking fund, which should be sufficient at the end of the useful life of the plant to either rebuild the plant or to restore to the investors all of their original investment, and unless either this or the depreciation account is provided from the revenues of the works, there will be a constant impairment of capital, and this condition should be provided against, either by way of depreciation account or a sinking fund which should come directly from the revenues of the plant over and above the cost of operation and ordinary maintenance, together with interest on the capital invested.

Q. You have stated above that there is a distinction between the invested or investment value of a water plant and the cost of present duplication or replacement of the plant. In an inquiry of this kind, is it the investment value or the cost of replacement that is sought to be ascertained?

A. It should be the investment value.

Mr. PICKLE: Counsel for defendant objects to the question as calling for the opinion of the witness on a matter of law.

COMMISSIONER: I will allow it to stand.

1571 Q. Leaving the subject of investment value, I will ask if you have made examinations for the purpose of ascertaining the reasonable costs of replacement at the present time?

A. I have.

Q. Have you prepared a statement showing the cost of replacement?

A. I have.

Q. To what date does your statement apply?

A. To September 30, 1902.

Q. To what date do the prices in your statement apply?

A. To September 30, 1902.

Q. If you have a written statement of the results reached by you in making this estimate for replacement I will ask you to give it to the stenographer?

A. It is as follows:

"*Estimated Cost of Building Works of the Knoxville Water Company as of Sept.* 30, 1902.

At river station:

Engine House and pits	$35,000.00	
Coal Chute	1,500.00	
Pumping engines and connections	37,500.00	
Boilers and steam piping	11,800.00	
Intake Tower	12,000.00	
		$97,800.00

High service station and filter plant:		
Buildings and basins	$18,000.00	
Engines and boilers	7,000.00	
Filters	37,500.00	
Grading and fencing	1,000.00	
		$63,500.00
Stand-pipes:		
On Reservoir Hill	$14,500.00	
Beaumont	7,500.00	
		$22,000.00
Reservoir:		
Excavation, embankment and lining complete		$28,720.00
Pipe distribution system:		
Cost iron pipe mains	$306,683.32	
Wrought iron pipe	15,360.90	
Gate Valves	14,876.50	
Hydrants	7,500.00	
Restoring street surfaces	43,669.20	
		388,089.92
Forward		$600,109.92
1572		
Forward		$600,109.92
Service connections		39,536.00
Meters		33,143.50
Total		$672,789.42
Add 10% engineering and contingencies		67,278.94
Final result		$740,068.36

In the above estimate there is no allowance made for real estate, office fixtures, supplies on hand, nor contractor's profit for furnishing cast iron pipe, and sundry other material.

Details.

Reservoir:	
16,000 cu. yds. excavation and embankment at .50	8,000.00
1,700 " " concrete bottom and lining " $10	17,000.00
Wire fencing	200.00
10% contingent item account bad bottom	2,520.00
	$27,720.00

Pipe distribution system—cast iron:

2,723.3	feet	20	inch	diam.	at	$3.40	9,259.22
714.9	"	18	"	"	"	$2.90	2,073.21
9,031.2	"	16	"	"	"	$2.43	21,945.82
7,607.8	"	14	"	"	"	$2.03	15,443.83
41,929.3	"	12	"	"	"	$1.47	61,636.07
27,373.9	"	10	"	"	"	$1.18	32,301.20
43,748.1	"	8	"	"	"	.88	38,498.33
119,676.7	"	6	"	"	"	.69	82,576.92
45,389.1	"	4	"	"	"	.47	21,332.88
27,278.7	"	3	"	"	"	.36	9,820.33
							$294,887.81
Specials (4% additional cost)							11,795.51
							$306,683.32

1573 Wrought iron pipe:

250.8	feet	3½	inch	diam.	at	.40	$100.32
489.7	"	3	"	"	"	.35	171.39
416.2	"	2½	"	"	"	.30	124.86
31,034.5	"	2	"	"	"	.26	8,068.97
5,618.3	"	1½	"	"	"	.22	1,236.03
5,425.0	"	1¼	"	"	"	.20	1,085.00
17,787.2	"	1	"	"	"	.18	3,201.70
7,937.0	"	¾	"	"	"	.15	1,190.55
1,517.3	"	½	"	"	"	.12	182.08
							$15360.90

Gates, valves and boxes set:

9	Gates—	20-inch	at	$125.00		$1,125.00
1	"	18	"	"	100.00	100.00
16	"	16	"	"	75.00	1,200.00
13	"	14	"	"	60.00	780.00
37	"	12	"	"	44.00	1,628.00
31	"	10	"	"	33.00	1,023.00
69	"	8	"	"	23.00	1,587.00
212	"	6	"	"	15.00	3,180.00
95	"	4	"	"	10.00	950.00
100	"	3	"	"	8.00	800.00
1	stop-cock	2½	inch	at	$5.00	5.00
58	" "	2	"	"	$3.50	203.00
11	" "	1½	"	"	$2.50	27.50
	Forward					$12608.50

1574

Forward	$12,608.50
15 stop cocks 1¼ inch at $1.50	22.50
54 " " 1 " " $1.25	67.50
3 " " ¾ " " $1.00	3.00
725 Boxes at $3.00	2,175.00
	$14,876.50
Hydrants set and connected:	
250 at $30.00	7,500.00
Service connections:	
4942 at $8.00	$39,536.00
Meters and Boxes, set:	
1286 Meters— ⅝ inch at $10.00	12,860.00
52 " ¾ " " 15.00	806.00
21 " 1 " " 21.00	441.00
19 " 1½ " " 41.50	788.50
19 " 2 " " 62.00	1,178.00
1 " 3 " " 150.00	150.00
6 " 4 " " 275.00	1,650.00
3 " 6 " " 400.00	1,200.00
1407 Boxes at $10.00	14,070.00
	$33,143.50
Restoring street surfaces:	
16,473 lineal feet—first-class—at .40	6,589.20
309,000 " " second-class " .12	37,080.00
	$43,669.20

1575

Weight of cast iron pipe (street mains):

Size.	Weight per ft.	Length ft.	Weight.
20″	175	2723.3	476,577.5
18″	150	714.9	107,235.0
16″	125	9031.2	1,128,900.0
14″	105	7607.8	798,819.0
12″	75	41929.3	3,144,697.5
10″	60	27373.9	1,642,434.0
8″	44	43748.1	1,924,916.4
6″	33	119676.7	3,949,331.1
4″	22	45389.1	998,560.2
3″	16	27278.7	436,479.2

Total pounds	14,607,949.9
Total tons	7,303.97
Plus 2% for over-weight	146.8
Total tons	7,450.05

Pipe estimated at $32.00 per ton.

Q. Did you examine any of the property of the Water Company in person?

A. Yes sir, I examined the stations and machinery and filter plant; generally the visible portions of the Water Works plant.

Q. Did you have access to any plans of the buildings?

A. Yes sir.

Q. Did you examine them?

A. I did, for any information that I wanted to get that I couldn't obtain by an examination of the property. I looked to the
1576 plans, but my estimate was generally made up from an examination of the property itself.

Q. In ascertaining the contents of the different buildings, what method did you pursue?

A. I examined the buildings carefully and approximated what the buildings could be replaced for. I checked to some extent the amount of material in them, but generally I based my figures upon my observation of cost of similar structures, and determined in my mind what the value of those structures would be.

Q. Where did you get your information as to the pipe distribution system?

A. That was furnished me by the water company, as to the number of feet of both wrought and cast iron pipe, gate valves, hydrants, service connections and other details necessary to make an estimate of the cost of building a similar plant as of that date.

Q. How did you determine the value of the different kinds of pipe in the distribution system?

A. Well I determined the cost of laying those pipes as of that date, assuming the correctness of the number of feet of the different sized pipe as furnished me by the water company, and adapted to those quantities the market price of cast iron pipe and the cost of laying as of that date.

Q. Were the prices of the pipe furnished you by the company, or were those pipes determined by you?

A. They were determined from my own information and knowledge.

Q. Is that true of all the pipe included in the system?

A. Yes sir.

Q. You are acquainted with the prevailing prices of pipe?

A. I think so, as near as it is possible to be with the fluctu-
1577 ating market that has obtained during the past two or three years.

Q. As to the valves and other appointments of a minor kind, are you familiar?

A. I think I am familiar with the cost of all those fixtures.

Q. Were the prices of the fixtures furnished you by the company or determined by your own judgment?

A. They were determined by my own judgment.

Q. What is the summary that you have reached?

A. The summary that I have reached exclusive of the allowance of real estate, office fixtures, supplies on hand and contractor's profit

for furnishing cast iron pipe and some of the other materials is $740,068.36.

The further taking of this deposition was adjourned until Wednesday morning January 28, 1903 at 9 o'clock A. M.

1578 WEDNESDAY MORNING,
January 28th, 1903—9 o'clock a. m.

Cross-examination by G. W. PICKLE:

Q. Mr. Ludlow, when did you make an examination of the plant of the Knoxville Water Company?

A. I made it partially in November, the early part of November and again during last week.

Q. How long did you spend in Knoxville in making the examination in November?

A. I was here about a week; either six or seven days.

Q. Did you come here at that time expecting to give testimony?

A. Yes sir.

Q. How long were you here at the second date that you speak of?

A. Three days.

Q. Did you come then expecting to testify?

A. I did.

Q. Then you had already prepared your statement and had it in readiness to give testimony before you came here in November, had you?

A. No sir I had not.

Q. Had you been furnished the data to make a statement before that time?

A. The data as to quantities do you mean sir?

Q. Yes sir?

A. No sir I had not.

Q. When was the statement of William Wheeler, set out on the pages that you have already referred to, and adopted by you in this deposition as correct, furnished you?

A. The greater portion was furnished me sometime in October; that is the portions covered by pages "23" to "115" "129" to "166-H" and "479" to "488," those were furnished me in October, and the remainder was furnished me sometime before the Christmas Holidays—I don't remember the exact date—but sometime in December.

1579 Q. How did you receive them, by mail?

A. Yes sir.

Q. At your home in North Carolina?

A. Yes sir.

Q. Will you please explain in this connection what is found on those pages?

A. Well the first three sections, pages "23" to "115," "129" to "166-H" and "479" to "488" embrace what is designated in the analysis of Mr. William Wheeler, as fixing the value of the Knoxville Water Company's plant up to March 30th, 1901. The remainder

covers additions made since, or up to March 31st 1902 and to September 30th 1902; it is an extention of the analysis to these later dates.

Q. You had never examined the Knoxville Water Company's plant until you came here in November, had you?

A. Had you.

Q. And you came prepared to give your testimony?

A. I cannot say that I came quite prepared at that time; I came for that purpose. I came prepared, so far as I could be without some more examination of the works.

COMMISSIONER: You were employed as an expert witness?

A. Yes sir.

Q. Did you make any actual measurements or calculations as to quantities?

A. Yes sir, I made some calculations as to the dimensions of some of the buildings.

Q. But in the main, you relied upon the quantities as found in the statement of Mr. William Wheeler?

A. I did as to the pipe lines, but I did not as to the visible portions of the plant. The figuers I have given are based upon my own observation of the visible portions of the plant.

Q. Did you make actual measurements of the buildings?

1580 A. Not all of them, no sir. In making up my estimate I may have had in mind some of the quantities shown in Mr. Wm. Wheeler's analysis but I could not day that I was influenced very largely by it.

Q. You made no changes from Mr. Wheeler's statements?

A. I don't think that the estimate of cost which I submitted with my testimony on yesterday is the same either in unit prices or net results on Mr. Wheeler's analysis.

Q. I am referring now not to the estimate of the duplication of the plant, but to Mr. Wheeler's estimate which you have approved in your deposition as to the original cost of the plant. There are no differences between you and he in that respect?

A. I don't understand that I have approved the original cost of the plant. His analysis as I understand establishes a fair value of the plant as of those dates as represented in the investment, which I did on yesterday in my testimony approve in general terms as the means of determining same, and in general the prices used in determinating them as being fair and reasonable.

Q. Well then do you or do you not approve the statement of Mr. William Wheeler as to the cost of this plant up to the 31st. of March 1901 as set out on the pages of the record referred to?

A. I approve the results determined in Mr. Wheeler's analysis, yes, sir.

Q. Then you do not approve it in all its parts?

A. Oh there may be some details that I perhaps would not agree with him.

Q. Could you state what they are?

A. No, sir I don't know that I could state them. I
1581 wouldn't care to say that I approved everything that is contained in it, but I do approve it in substance and general results.

Q. Well, Mr. Ludlow, you stated in your examination in chief that you have testified in relation to the cost of water works in one other case only, and that was the Chattanooga case. When did you give that testimony?

A. I think about two years ago—I am not certain as to the date.

Q. Please examine the paper I hand you endorsed #586, City Water Co. *vs.* Mayor and Aldermen of Chattanooga, Deposition of J. L. Ludlow, *et als.* for defendant" filed August 6th, 1900, R. M. Watkins, D. C." and state whether or not your deposition is found on pages "1 to 20" and "48 to 52" inclusive of this batch, and whether the Exhibit thereto consisting of several pages, entitled "memoranda for deposition on Chattanooga Water Works, Exhibit "A" to J. L. Ludlow" is the deposition to which you refer, and ascertain from the same when it was given?

A. This appears to be my deposition, sir, but I am not certain that it is exactly correct.

Q. Was it taken by the defendant about the date when it is marked filed August 6th, 1900?

A. It is marked at the commencement of the deposition as being taken July 25, 1900.

Q. You testified on behalf of the city in that case as an expert?

A. Yes, sir, I did.

Q. You took considerable pains at that time to inform yourself as to the prices of material, labor and condition of the plant, did, you?

A. I did.

Q. Chattanooga is situated in the state of Tennessee, and within about 110 miles of Knoxville, isn't it?

1582 A. I would answer yes, to the first portion of the question; I don't know the mileage.

Q. It is a city of about the same size in population?

A. I am not advised as to that, sir.

Q. It is in about the same class of cities as regards water works?

A. I couldn't answer that affirmatively.

Q. You classified it with Knoxville in regard to water works plants didn't you?

A. Yes, sir; there are some points of resemblance in the water works and conditions governing water supplies in the two cities.

Q. The territory covered by the water supplied in Chattanooga is much greater than in Knoxville, isn't it?

A. I am not so certain as to that, sir; I am inclined to a reverse opinion.

Q. I mean inside and outside the city?

A. I rather think the reverse, sir; I am not certain about it.

Q. When was the work done that you estimated in the Chattanooga case?

A. Well it had been done over a long term of years, I think, sir.

Q. Covering what period?
A. I do not know.
Q. It covered a period from about 1880 up to the time you testified or back of 1880?
A. I should think it back of 1880.
Q. It ran through the '80's, didn't it?
A. I should judge so, yes, sir.
Q. In figuring the contractor's profits in that case, you used 10%, didn't you?
A. You will have to allow me the deposition and see, sir; whatever I stated there, I used.
Q. Well it is on page "4" of your deposition?

A. I allowed 10% on the price that I had fixed in making
1583 an estimate on the cost of building the works at that time.

Q. And you figured this per cent. into the prices that you fixed as the cost of the works, did you not?
A. Yes, sir, I think I added that 10% after I had made up my estimate of unit prices—that I added that 10% to cover contractor's profits.
Q. That appears in the item without being added on as a separate item?
A. Yes, sir.
Q. And you added it into the price of the thing and it don't appear as a separate item?
A. It may appear in that summary.
Q. Well, I wish you would look and state whether it does or not?
A. That appears to be merged into the prices.
Q. Into the prices that are contained in this exhibit?
A. Yes, sir.
Q. In making up your estimate in that case you figured 5% as the basis for engineering services didn't you?
A. I think it was 6%, engineering and contingencies.
Q. Wasn't it 5% for engineering and 6% for engineering and contingencies?
A. I don't recall anything of that sort, sir.
Q. Isn't the 6% for engineering and contingencies?
A. (Witness examines deposition.) It is.
Q. What do you mean by contingencies?
A. Well it is a very flexible proposition; it is very comprehensive or incomprehensive according to conditions.
Q. How much of the 6% do you allot to contingencies?
A. I do not remember, sir, how I divided it in that case; I do not remember what part I considered as a proper engineering fee at that time; of course it would be the difference between what I allowed for engineering and the 6% that I allowed for both items.

1584 Q. Well, it wouldn't be too much to allow 1% of the 6% for contingencies would it?

A. It would not be too much. I should say in that connection that that percentage there did not cover wholly what I had in mind as a matter of contingent sum; I had already allowed 10% on con-

tractor's profits after making up my estimate of what the work should cost. As a rule I use figures based upon contractor's cost, and in adding that 10% I very probably had in mind something in the nature of contingencies, which in that case was intended to cover items that I had over-looked in making up the detailed estimate; so that proportion of that 10% would perhaps represent contingencies in addition to the 6% which I have allowed there for that purpose.

Q. Well this 6% is calculated on the 10% contractor's profits as well as on the other elements entering into the cost of the items?

A. It is, yes, sir.

Q. Mr. Ludlow what is the method of computing the number of brick in a building?

A. Well to do it in detail requires the measurement of all the cubic contents of the wall, a deduction therefrom of all the window and door openings, which determines the number of cubic feet in the wall, and that multiplied by the number of brick required to make up one cubic foot of wall would give the number of brick in the wall. That is an approximate, but is not absolute, as the thickness of the joints and the size of the brick may vary.

Q. What method did you in fact pursue in estimating the number of brick in the Knoxville plant?

A. I didn't undertake to give the exact number, for a great many of them were hidden, for instance the brick in the wells at
1585 the pumping station and at some other places, to get at the value of those buildings, I based my estimate upon general knowledge of the cost of erecting such buildings according to the difficulties that appeared to exist, but I couldn't state the exact number of brick those buildings contained.

Q. What I am wanting to know is the method you adopted to ascertain the number of brick—not the number that you ascertained in any particular buildings?

A. I didn't ascertain the exact number of brick.

Q. Then you accepted the number that was furnished and shown in the statement by the Water Company?

A. Well not wholly, no, sir. In fact I can hardly say that I made my estimate of the value of the buildings upon that analysis. As I stated before, I fixed the value of those buildings upon my general knowledge of the cost of erecting such buildings under the conditions that existed.

Q. Still there are two methods of ascertaining the number of brick, one known as an engineer's method and the other as a contractor's?

A. That method may be locally so; some places it is and some places it is not.

Q. Well, now in the analysis of the plant which you have adopted in substance, made by Mr. Wheeler and set out on the pages of the record you have already indicated shows so many brick to the different buildings. By what method was the number of brick ascertained that went into that analysis?

A. I didn't ascertain that; I have no knowledge as to how they ascertained it.

Q. Then you didn't undertake to verify all those cases?

A. Not in all cases; I perhaps did in a few cases, but not all the way through. I do not think that any two persons could
1586 make the calculation as to the number of brick in a completed building and reach the same result.

Q. Well, the brick used in these buildings here are about the same size as those used at Chattanooga?

A. I should judge they were about the same, yes, sir.

Q. And your method is to ascertain exactly the number of bricks in the wall is the object of the method that you pursued in estimating brick?

A. Yes, sir, if I thought it was necessary for me to calculate the number of brick in a wall I would do, it that way, by getting the number of brick in a unit of measure, then finding how many measures there were in it.

Q. Mr. Ludlow, what allowance per thousand did you make for brick laid in the wall, including lime, mortar, labor and 10% contractor's profits in the Chattanooga case?

A. I do not recall, sir.

Q. Will you look to your deposition and see (Hands witness deposition)?

A. There appear to be in the filter house 83,000 brick at $8.00 per thousand. It appears to be $8.00 per thousand, but I would not answer that that includes all that your question indicates—I could not tell as to that.

Q. Well, haven't you stated already that you included the contractor's profits?

A. In some instances I did, yes, sir.

Q. Well in what instances didn't you?

A. I couldn't tell. I may have done so all the way through.

Q. Well now on page "4" of this deposition in the Chattanooga case, didn't you make this statement: "The aggregate of the plant, everything pertaining to the city plant, everything at the Citico, Pumping Station that is a part of the Water Works plant, exclusive of the real estate, amounts to $493,567.47; that is for the city
1587 limits. Outside of the city limits, exclusive of the real estate is $101,849.21; both of these amounts include what I have allowed for a contractor's profit of 10% on the actual value that I have placed on the separate items to make up the works." Did you make that statement?

A. I do not know whether I made the statement or not; I probably did; I couldn't make affidavit to it; I judge I did.

Q. Isn't that statement as I have read it in your deposition on the page indicated?

A. It so appears on the page in what appears to be my deposition.

Q. Now does it not appear from the Exhibit to your deposition that no additional per cent. was made outside of the amount of the

items themselves for contractor's profits and that therefore the contractor's profits are included in the prices there given?

A. No, sir, it does not. That 10% is a separate item making up that total of $493,567.47.

Q. Where?

A. Right at the end of the summary.

Q. In estimating the price at which you put in brick you put them at a higher price than was testified to by some of the contractors that were introduced to prove the price of brick laying in Chattanooga?

A. I do not know, sir; I never heard their testimony, and have never read it.

Q. Well, I will ask you if you didn't make these statements in your deposition referred to "Q. How did you get at the price of the brick in the wall? A. Well, from experience with such work I know what it would cost to lay brick in walls very closely, and I used my own information as to the value of the brick in the walls.

1588 Q. You took the value of the brick according to the prices charged you at other places? A. Well, no, sir, only the cost of laying them in the walls; I know for instance that a brick-mason can lay so many brick and I know what the mortar costs and I know that the brick cost a certain figure and from that I figure out the cost of the brick in the wall, * * *. Q. Did you get any information on this subject here? A. Well, I have since I made my estimates, yes, sir. Q. From whom did you get it? A. I got it from talking with different contractors. Q. Who was the contractor? A. I heard a man named Dowling, I have hear- him express himself and another man whose name I don't recollect. Q. Mr. Dowling is one man and another man whose name you don't recollect are the only men that you have hear- talk as to the value of that kind of work? A. Yes, and I will say, since you have asked me, that his prices are less than mine so that I have not followed his information at all in estimating the value of the brick work."

Q. I will ask you if that is not a part of pages 24 and 25 of your deposition in the Chattanooga case?

A. That appears to be there, sir, and it does not conflict with the statement I made a moment ago, namely, that I didn't know whether my prices were more or less than the other contractors, as I had not read their deposition, and I do not know now that the prices they gave in their depositions were the prices they had given me.

Q. Well now your estimate of brick laid in the wall includes in the Chattanooga case brick laid in the wall above ground as well as below ground, doesn't it?

A. I presume so, yes, sir.

Q. What difference do you make as an expert between laying common brick in the wall in sand mortar and hydraulic cement?

1589 A. That would vary with different prices of lime and cement; at the present time Portland cement is very high sir.

951

Q. I am not asking you about Portland cement.

A. Portland cements are hydraulic cements. There is what is known as a Rosendale cement which is hydraulic; I will say any cement for that matter and leave out the word "Portland."

Q. Well you say it depends on the price of cement?

A. Yes sir; at the time that my deposition was given in the Chattanooga case, cement was very cheap indeed; now it is very high.

Q. How was it at the time the works at Chattanooga were erected?

A. I presume it varied from high to low and from low to high.

Q. Mr. Ludlow look under the head of "Pump house" in the Exhibit attached to your deposition in the Chattanooga case and state whether you did not estimate 476,000 brick in the pumping well at $12.00 and 172,000 brick in the stack at $12.00 per thousand?

A. It appears so from this copy, yes sir. I should add to that answer that in the summary of results there was 10% added.

Q. Mr. Ludlow, in your estimate of the value of the Chattanooga, at what price did you estimate cast iron pipe?

A. I think it was $24.00 a ton.

Q. That is covering the whole period?

A. No sir, I had nothing to do with the whole period; I was simply making an estimate as of that date, that is an estimate of the cost of building the works as of that date.

Q. So you were using present prices?

A. I was using prices as of that time. What I was undertaking to determine in that case was the structural value of the Chat-
1590 tanooga water works plant at prices obtaining at that particular time. Therefore the conclusions had nothing whatever to do and no relation with the cost of the works as they may have been to the company from time to time during construction.

Q. Wasn't $24.00 something more than the pipe was worth at Chattanooga at that time?

A. I do not know that it was more than it was worth. I assume that to be what pipe could be bought for at that particular time in Chattanooga and based that assumption upon the best information and knowledge I could gain, and I believe it was about the correct price.

Q. Didn't you on pages 11 and 12 of your deposition taken at Chattanooga make this statement: "A. I placed a price on cast iron pipe of $24.00 a ton f. o. b. cars here at Chattanooga, but I have bought lower than that at different times, but I have realized that it would not be sold here possibly at the same figure as it would be if it was going to some other point, and therefore, I have added a couple of dollars a ton and called it $24.00 f. o. b. here, but I think I have allowed more than was necessary and think that possibly it ought to be bought for less than $24.00 a ton; in making these estimates I have made a fair allowance for the cost of laying the pipe, considering the character of the soil, and based the price upon the cost at which the same sized pipe has been laid elsewhere, with which I am more or less familiar at all times."

Q. Isn't that statement found on pages "11," and "12" of your deposition in the Chattanooga case?

A. It is.

Q. On page "50" of the same deposition, did you not make this statement: "Q. The prices that you relied on were the prices that were quoted for Charleston? A. No sir, not at all; of
1591 course I had been buying pipe in some quantities for different points, for Salisbury, N. C. Chapel Hill, N. C. and Rock Hill, S. C. and some other places. At Rock Hill I had pipe invoiced at $26.00, I think, and making a due allowance for the difference between the two places, I think that pipe ought to be delivered for about $22.00 or $23.00 a ton here. At Salisbury I have had pipe invoiced for $22.00 f. o. b. cars here, one lot, and the last lot, a small lot, I bought down there was $23.00 f. o. b. here—that was several weeks ago."

Q. Isn't that statement found on page "50" of your deposition in the Chattanooga case?

A. I will answer yes.

Q. On page- "50" and "51" of the same deposition, speaking on the same subject: "Q. Then that is a mere conjecture on your part (Meaning the price of the pipe) as to that? A. Yes, in making my allowance of $24.00 a ton, there is an allowance of $2.00 a ton for the local situation, and I thought that would cover the conditions that you have named."

Q. Isn't that statement found on the pages above indicated?

A. It is.

Q. Wasn't the situation that you referred to the fact that there being no possibility of competition at Chattanooga that they would charge perhaps more for pipe manufactured there than at other places?

A. It was.

Q. And the $2.00 was added in view of that situation?

A. Well about $2.00, yes sir.

Q. In laying pipe what is figured into the cost of laying in addition to the price of the pipe; or rather in estimating the value of laying pipe what is figured in?
1592 A. The cost of excavating the ditches, the cost of pipe, the cost of hauling the pipe, and the cost of handling it and laying it in there; the cost of lead for making the joints, the cost of labor and fuel for making the joints and the cost of back filling the trench; sometimes the restoration of the street surface is included, other times it is not. I have given, not the cost of laying the pipe but the cost of the pipe laid as I understand that was the meaning of your question as you expressed it.

Q. Well in your estimates of the cost of laying pipe, or of the pipe in the Chattanooga case, you included everything except restoring macadam or other surface treatment over the ditches, didn't you?

A. I think I did, yes sir.

Q. You also included in the estimate of laying pipe the setting of pipe and specials?

A. I think so. All that was based upon cost of labor and material as of that particular time.

Q. The prices for laying pipe, including setting of pipes and specials, ditching, &c., except restoring macadam or asphalt was estimated by you in the Chattanooga case, as follows, were they not?

1	inch	pipe,	4 cents	10	inch	pipe	15 cents.
2	"	"	4 "	12	"	"	18 "
3	"	"	7 "	14	"	"	25 "
4	"	"	9 "	16	"	"	33 "
6	"	"	10 "	18	"	"	42 "
8	"	"	12 "	20	"	"	50 "
				24	"	"	60 "

A. The cost of laying was very low at that time and I do not remember the figures.

Q. Well will you examine the figures and see whether I am correct or not?

A. It so appears in that copy.

Q. And that included all excavation, whether of rock or earth, in the ditches didn't it?

A. I think it did, yes sir.

Q. And the price of laying including the pipe that you
1593 figured in the Chattanooga case was as follows:

1 inch pipe, 14 cents	10 inch pipe, 87 cents
2 inch pipe, 20 cents	12 inch pipe, 1.18 cents
3 inch pipe, 25 cents	14 inch pipe, $1.55
4 inch pipe, 35 cents	16 inch pipe, $1.94
6 inch pipe, 50 cents	18 inch pipe, $2.39
8 inch pipe, 65 cents	20 inch $2.78
	24 inch pipe, $3.60.

Q. Is that correct?

A. It appears so from that copy; the pipe at $24.00 per ton.

Q. The weight of pipe per foot that you adopted in that case were as follows, were they not:

3 inch pipe 15 lbs.	12 inch pipe 84 lbs.
4 inch pipe 22 lbs.	14 inch pipe 105 lbs.
6 inch pipe 33 lbs.	16 inch pipe 134 lbs.
8 inch pipe 44 lbs.	18 inch pipe 164 lbs.
10 inch pipe 60 lbs.	20 inch pipe 190 lbs.
	24 inch pipe 250 lbs.

A. That is correct, yes sir.

Q. What do you mean by "specials" in the item found in said Exhibit "Specials 2%, 4740 tons of pipe,—95 tons at $50.00, $4750.00." What is the significance of the word "special"?

A. It is the special pieces of pipe placed in the lines in order to make connections with other pipe lines—T's and crossings.

Q. You figure 2% for specials?

A. Two per cent. in weight I judge; if it had been figured in value I should have taken 4% of the value of the pipe; if it is fig-

ured in weight I doubtless took 2% of the weight of the straight pipe to determine the weight of the specials required.

Q. I will ask you to state at what figure you did estimate gates or valves in your estimate in the Chattanooga case?

A. At the market value as of that date as near as I could determine.

Q. Well did you not estimate gates as follows:

1594

2 inch, $ 3.00	12 inch, $ 30.00
3 inch, $ 6.00	14 inch, $ 40.00
4 inch, $ 9.00	15 inch, $ 50.00
6 inch, $13.00	20 inch, $ 90.00
8 inch, $18.00	24 inch, $150.00
10 inch, $23.00	

A. That sounds very much as though those were the prices of that date, yes sir.

Q. What did you figure meters at?

A. At the market price as of that date as near as I could determine them.

Q. Do you remember what they were?

A. No sir; I think I had quotations on meters at that time but I do not remember the prices.

Q. How did you get the quotations?

A. From the manufacturers, I think. I am not certain but I think I did; meters were changing in value from time to time and the meter companies frequently sent out list prices with discounts and it is usually not very difficult to determine the market price of meters.

Q. Mr. Ludlow, you figured the 10% contractor's profits in upon the assumption that the water company has not paid the parties who did the work otherwise than by this estimate, do you not?

A. No sir I didn't have that in view. I was undertaking to determine what those works, or works similar to those could be built for as of that time. To do that I fixed as nearly as my judgment would enable me the unit prices at which such work could be done, perhaps allowing to some extent contractor's profits in my unit prices, but to be certain to get the actual cost, or what the works could be constructed for at that time, I added this 10% for which a contractor would probably do the work, as a proper basis. In other words I tried to determine the cost unit prices of that work, and as
1595 work at that time was not abundant, I put the contractor's price at a low basis, thinking that a contractor could be found to undertake and do the work, when work was comparatively scarce, on a 10% basis.

Q. You figured some of the contractor's profits into the original items, and then you figured on an additional 10% for contractor's profits as a whole, didn't you?

A. I don't say that. I say I may have, as it is very difficult to separate actual cost from contractor's profits.

Q. Suppose the company did the work through salaried officers

and employés that were paid out of its operating expenses. Would you figure on the contractor's profit then?

A. That would depend sir upon the purpose I was after. Of course the cost would not include any contractor's profit if it were done by salaried officers. In such case that element of cost should be left out.

Q. Hasn't contractor's profits already been paid in the way of salaries and compensation to employés?

A. Oh no that wouldn't be contractor's profits; that might be contractor's costs but not contractor's profits.

Q. Supposing the supervising engineer and all the force are on salaries and are paid out of the earnings of the plant. Would you then figure into the amount paid them a contractor's profit?

A. Would I figure that in what connection?

Q. In this connection?

A. As determining the cost of the works?

Q. Yes sir.

A. I would not figure any contractor's profit in determining the actual cost of the works, but I should assume that the supervising engineer, or whoever had direct charge would receive compensation that would, in a degree be equivalent to a contractor's profit.

Q. In other words the construction account instead of the
1596 operating expense account out of which they were paid, should bear its proportion of their salaries during the time of this construction work, shouldn't it; in other words if you allow contractor's profits when the work is done by salaried officers of the company, then their salary during that time should be reduced so far as a charge against operating expenses to the extent that it is devoted to construction work, isn't that so?

A. I think it should be apportioned to the different parts of the work.

Q. Mr. Ludlow, how has the price of cast iron pipe ranged for the last 15 years—how low has it been at any time to your knowledge?

A. I think sir at one time in Chattanooga it was selling as low as $14.00 a ton and possibly a little less than that; that was following the panic in the early 90's.

Q. Wasn't it as low as $13.00?

A. I rather think so; I am not sure I think perhaps it could have been bought at that price at that time.

Q. Didn't you state in your Chattanooga deposition that it had ranged as low as $13.00?

A. I may have so stated, yes sir.

Q. What year was that?

A. I think it must have been about 1894 or 1895. Those prices were f. o. b. cars Chattanooga—no freight allowance.

Q. What width of ditching did you estimate in the Chattanooga case as necessary for laying pipe?

A. Various widths according to the size of the pipe.

Q. Did you reduce it to an average?

A. I may have done so; I am not certain.

Q. Well how did it range?

A. I do not know how it was in that particular case, not
1597 what figures I used in that case, but ordinarily I should say that no pipe should be laid in a ditch less than two feet wide and that no pipe to be laid in a ditch less than 12 inches more than the diameter of the pipe that is intended to lay in the ditch.

Q. In your estimates of this plant here, what width of ditching did you adopt?

A. About the basis that I have indicated in the previous answer.

Q. Well did you adopt a basis for the whole or different parts of it?

A. I got the cost of laying the different sizes separately; an 8 inch would cost so much, a 10 inch so much and so on with the different sizes, the amount of excavation, the amount of lead required and the cost of handling due to the different costs of the weight of pipe.

Q. Wasn't the basis of the Knoxville work made upon a three foot ditch?

A. Mine was not.

Q. I now refer specially to the analysis of Mr. Wheeler that you have approved?

A. I don't remember whether three feet was figured anywhere as an average or not sir; it may have been.

Q. Well then you don't know what estimate was made as to the ditching in that schedule of Mr. Wheeler's that you have sworn about?

A. Well I hav-n't looked upon that as a very material point, and in fact I hav-n't looked into that carefully and examined the prices that were given for laying the different sizes of pipe and the method of determining those prices has not been a matter of serious interest to me.

Q. Didn't you adopt two and a half feet as the maximum as your estimate in the Chattanooga case?

A. Not as to 24 inch pipe.

Q. Didn't you adopt it as an average?

1598 A. I may have done so but the average would change according to the number of feet of different sized pipe.

Q. In making your estimate of replacement, you have adopted what width of macadam or other material to be restored?

A. About two and a half or three feet. The ditches may not be so wide but the breaking up of the macadam or other improved surface will extend beyond the lines of the ditch and be some wider that the ditches themselves.

Q. You have charged for restoring macadam throughout the entire length of pipe in your estimate of replacement, hav-n't you?

A. No sir, only for the number of feet furnished me by the company for pipes laid on streets of macadam surface.

Q. Well I will ask you if that doesn't cover the entire pipage of the city?

A. I think not sir.

Q. What is the pipage of the city in feet?

A. There appears to be 395,949 feet of pipe laid, and the amount

of street surface that has been counted as destroyed or disturbed and to be repaired is 325,473 feet.

Q. Well how is the difference accounted for?

A. Well I presume there are some streets that have never been improved or macadamized.

Q. On page "6," or rather on the last page of your estimate, isn't there a statement of the entire amount of pipe in the city?

A. Well, this gives the total length of cast iron pipe and not of the wrought iron pipe; this is not footed up in feet however.

Q. You have estimated the restoration of macadam or higher price material for the entire amount of wrought iron pipe, hav-n't you at 325,473 feet?

A. Yes sir, but the total amount of pipe is 395,949 feet, a difference of about 60000 or 70000 feet.

1599 Q. My question is hav-n't you estimated for the restoration of street surface on the entire amount of cast iron pipe laid?

A. No sir I didn't have that in mind at all, the amount of cast iron pipe laid. I estimated that upon the number of feet of the improved street surface which had been disturbed as furnished me by the officers of the water company.

Q. And hav-n't you estimated the restoring of macadam at two cents more than you did in the Chattanooga case?

A. I may have done so sir. I- costs more to do work of various kinds now than it did then.

Q. Mr. Ludlow, what did you figure excavation at in your Chattanooga estimate?

A. I do not know sir.

Q. Will you look at the estimate and state?

A. I see some excavation here at 20 cents per yard, I find some at 25 cents per yard, I find some at 50 cents per yard, and I find some at 30 cents per yard. I believe those are the only prices.

Q. Now what kind of excavation do you estimate at 20 cents?

A. I believe it was for brick walls in dry ground.

Q. Well I find the following items at 20 cents: "At old station 100 yards of excavation for walls at 20 cents, boiler room and coal house, 500 yards excavation at 20 cents and clear water basin 3,600 yards excavation at 20 cents" was that for earth excavation?

A. Earth excavation, yes sir.

Q. For walls and basin?

A. Yes sir.

Q. The excavation for which 50 cents a yard is charged, is 2,350 yards for excavation of a pump well, wasn't it?

A. If so stated, it appears correct, yes sir.

Q. It involved the digging of a well and the encounter of earth and rock both, didn't it?

A. No sir, I am not supposed to include any rock in that.

1600 Q. You have no additional estimate for the rock encountered?

A. If there was any rock encountered I would have. If I have no estimate for it, presumably there was none encountered.

Q. That well was dug about 48 feet deep?

A. I don't think that well was dug so deep. My recollection is that the well extended into the original soil only a short distance, but was filled up or extended above the *service* of the ground in order to get it above the high waters of the river.

Q. And the 180 yards of excavation found in this report at 30 cents, was excavation made for a chimney stack, wasn't it?

A. That is correct, yes sir.

Q. Have you anywhere in this estimate made an additional allowance for rock excavation, or is it included in these items?

A. If there was any rock anticipated in any way I would have made an additional allowance for the rock. I am not certain whether there was any or not, but I would not have fixed the price at 50 cents a yard where rock was anticipated I am quite certain.

Q. Now in speaking of this excavation in reference to rock did you not say this in your deposition on page 30: "A. Yes sir, I examined the soil at the station; the rock if they found any could be used in the walls and would save more than the cost of getting the rock out."

A. Yes sir, I may have said that; it sounds very natural to have been said.

Q. In making up your estimates in this case, did you or were you permitted to examine the books of the water company as to the cost of materials that entered into the construction of the plant?

A. I didn't ask for such permission and it didn't occur to me that I wanted it.

Q. Well in making up the estimate of cost from year to
1601 year and bringing into the plant only those portions that were put in during the year, don't you think it would be eminently proper to look to the actual cost of the material—what was actually paid for the material by the company?

A. I did not so view it in the Chattanooga deposition you have been going over; I did not take that as the controlling factor from which I was supposed to determine it.

Q. But you were not making up a statement in that case of the actual cost of the plant from year to year were you?

A. No sir, neither have I in this case.

Q. The statement of Mr. Wheeler that you have approved is a statement made up from year to year isn't it?

A. That is right.

Q. And is out of the order of those statements; it is different from the independent statement you made in the Chattanooga case and which you made in this case, isn't it?

A. I should think not, but is the proper method of reaching the conclusions desired.

Q. Is there any better evidence of the actual cost of a plant or the material that enters into it than that which the books of the company show was actually paid for the material that went in it?

A. If the books are complete and the records embrace every part of it, there could be no better evidence.

Q. Wouldn't that be better evidence of the cost of material?

A. If everything had been put down and included.

Q. There is no necessity to guess at or estimate the cost of ma-

terial when the books of the company would show you what it cost them, would there be?

A. I think there would be no real necessity for that sir.

Q. And on this subject of getting prices by general infor-
1602 mation, did you not say this in your Chattanooga deposition on page "7": "Q. Item #6 Machinery at Citico Pumping Station explain briefly how you arrived at the valuation placed on that. A. Machinery at Citico Pumping Station. The two Nordberg engines I took the valuation placed upon them from a general acquaintance with machinery of that character. I consider it impracticable to give an exact value from any quotation that you may receive from manufacturers; it is impracticable to give values by that method; people will give *bona fide* quotations only when there is a sale in sight, and one who is figuring more or less on all types of machinery knows that machinery can be bought very much closer when it is positively known that a sale is to be made."

A. I think I said that sir.

Q. And is that not true of other material as well as of machinery?

A. I think it is largely true. At the present time I think I could secure an absolutely *bona fide* quotation on certain materials entering into water works on account of business relations which I have with certain concerns that furnish those materials, and others I could not. As a rule however, that statement is correct; quotations are not given *bona fide* except when a sale or purchase is in sight.

Q. Is it not true Mr. Ludlow that the price of $32.00 at which you figure cast iron pipe in your estimate of replacement of this plant, is the highest that that sort of pipe has been known since you have been in business?

A. No sir, I think it is higher right now than that.

Q. I am talking now of course meaning prior to that time?

A. Well I do not know sir. I think there was a time
1603 in the early '80's when pipe was higher even than it is now. During the past year or two the price of cast iron pipe has been fluctuating very much and generally on the rise. At the time considered the price of cast iron pipe was rather high.

Q. Why did you not make out a statement of the replacement of this plant as of date March 31, 1901, or have you made such statement?

A. No sir.

Q. Have you been asked to, or have you attempted any such statement?

A. I don't think I have been asked to.

Q. Did you attempt an estimate as of the 31st of March 1901?

A. I think not sir, personally.

Q. Personally, well did you make tentatively such an estimate?

A. Yes sir I made such an estimate but not as complete as the one I turned in. There was not such a difference between the two except in the cost of cast iron pipe. I think as of that date, March 31, 1901, that I figured the cost of cast iron pipe would have been $28.00 a ton instead of $32.00 a ton as it was last Fall.

Q. That was only a few months after giving your testimony in the Chattanooga case?

A. That was a year after—nearly a year after.

Q. It was from July to March?

A. Yes sir, but the cost of cast iron pipe in Knoxville is of course considerably more than it was at Chattanooga, even at that date 1900.

Q. What did you do with that estimate of that date?

A. I made no estimate. I with some other gentleman, for my own information, undertook to arrive at the difference of the cost as of that time, but my estimate was based upon September 30th 1902.

Q. Who were these gentlemen?

1604 Mr. CALDWELL: I don't think that is necessary for General Pickle to know.

COMMISSIONER: Let him answer the question.

A. Mr. Hider and Mr. Johnson.

Q. The cast iron pipe used in the Chattanooga and Knoxville Water Works is of the same general quality, is it not?

A. Cast iron water pipe yes sir.

Q. And in both plants different sizes were used?

A. That is correct.

Q. Pipe is estimated at 2,000 lbs. a ton, isn't it?

A. Yes sir, that is the usual method in this country. Some sales are made upon the long ton of 2,240 lbs.

Q. But, 2,000 lbs. is the common estimate here?

A. Yes sir.

Q. Now in the estimates, it is estimated by the foot, so much per foot, isn't it?

A. Yes sir.

Q. There will be more or less feet in a ton of a particular size of pipe according to the number of pounds that you assign to the foot, will there not?

A. Yes sir.

Q. If a larger number of pounds is assigned per foot there will be a smaller number of feet per ton?

A. Yes sir.

Q. And if a smaller number of pounds per foot is assigned there will be a larger number of feet in a ton?

A. That is correct?

Q. And it will vary the price of the pipe per ton?

A. Not the price of the pipe per ton.

Q. Well when you put it to the footage basis, it will vary?

A. Yes sir the price per foot will vary with the price per ton.

Q. Well isn't this a fact Mr. Ludlow, have you not in your estimate of replacement in this case estimated 20 inch pipe at 175 pounds per foot?

A. 175 pounds per foot, yes sir.

Q. Did you not in the Chattanooga case estimate 20 inch
1605 pipe at 190 lbs. per foot?

A. I may have done so.

Q. Well look at your deposition and see if that isn't true?
A. Yes sir, it appears that I have done so.
Q. Now in this case you have estimated 18 inch pipe at 150 lbs. per foot haven't you?
A. Yes sir.
Q. And in the Chattanooga case you estimated it at 164 lbs. per foot?
A. Yes sir.
Q. In this case you have estimated 16 inch pipe at 125 lbs. per foot, hav-n't you?
A. Yes sir.
Q. And in the Chattanooga case you estimated it at 134 lbs. per foot?
A. Yes sir.
Q. And in this case you have estimated 12 inch pipe at 75 lbs. per foot, haven't you?
A. Yes sir.
Q. And in the Chattanooga case at 84 lbs. per foot?
A. Yes sir.
Q. In this case you have estimated 3 inch pipe at 16 lbs. per foot and in the Chattanooga case at 15 lbs. per foot?
A. Yes sir.
Q. How many feet in a ton of 2,000 lbs. of 20 inch pipe estimated at 175 lbs. and 190 lbs. per foot respectively?
A. One is 11.4 and the other is 10.5.
Q. Nearly a foot's difference isn't it?
A. Nearly a foot's difference.
Q. And that would add to the cost of the pipe laid at Knoxville over that at Chattanoga 20 inch?
A. Well if I had taken the weights used in Chattanooga they would have increased the estimate which I have made in Knoxville.
Q. Ain't you mistaken about that when you charge by the foot
A. No sir.

Q. Isn't there more feet at 175 lbs. per foot than at 190
1606 lbs. per foot?

A. Oh yes, more feet in a ton.
Q. And you have charged it more per foot?
A. Yes sir, but my charge per foot is based upon the cost of pipe in that foot.
Q. But you have estimated the pipe at so much per foot in both instances?
A. I have determined the value of the pipe per foot by the number of pounds in a foot at so much a pound. If I had used 190 lbs. instead of 175 lbs. in the Knoxville case of 20 inch pipe, my cost per foot would have been increased by the difference in pounds, namely, fifteen times the unit price per pound.
Q. You have explained in your exhibit to this deposition how you arrived at that?
A. I don't know that I have.
Q. Well why did you use a different pound per foot in the two cases if it was the same sort of pipe and the same sort of pipe weighs the same?

A. By the same sort of pipe I do not mean they are identical weights. Cast iron pipe is made in various weights, standard weights, light weights and heavier weights and different foundries have different standards of weights for the same size of pipe. In the Chattanooga case I doubtless assumed the Chattanooga Foundry weights directly. I may have made a mistake and gotten those weights wrong, or I may have had in mind the excessive pressure to which those pipes would be subjected and if so that would require an increased weight of pipe, or I may have taken the weights as given me by the water company. There are several reasons why I may have used a different weight in the Chattanooga case over the weights here. In the Knoxville case I have adopted what I conceive to be the average standard weight of the different sizes of pipe.

Q. Then you accepted whatever figures the Knoxville Water Company gave you on that point?

1607 A. No sir, they didn't give me any weights of cast iron pipe at all.

Q. What is the price per foot of cast iron pipe, laid—20 inch pipe, I mean?

A. The price I have used is $3.40, except it does not include an allowance for specials, which I have put in at the end of my estimate for cost of laying pipe. But had I used 190 lbs. instead of 175 lbs. as the unit weight of 20 inch pipe, the price would have been about 24 cents more per foot.

Q. You have added on 2 per cent. to the pipage haven't you in your estimate here?

A. Two per cent. for what?

Q. Two per cent. of the weight of the pipage; look on the last page of your estimate for over-weight?

A. Well no sir I didn't allow this in the summary from which I am reading now. That is only for the purpose of another comparison; perhaps I should have done so.

Q. What summary are you reading from?

A. In answer to your question as to the price I have allowed for laying different sized pipe—20 inch pipe.

Q. Well now what is the correct weight, 175 lbs., or 190 lbs.?

A. My judgment is that 175 lbs. is more nearly the correct weight to be used.

Q. Than the weights given in the Chattanooga case?

A. Yes.

Q. Mr. Ludlow, what is the ordinary percentage of gross earnings of water plants in cities of this size that are necessary to be appropriated to operating expenses?

A. I couldn't answer that; it would vary with varying conditions; it wouldn't be the same in any 2 cities or towns.

Q. Mr. Ludlow, wasn't this your statement on the subject of the elements that enter into a fair return to investors in a water

1608 plant as made on page "18" of your deposition in the Chattanooga case? "Q. What items should the income from a water works plant operated by a private company cover what items

should be covered? A. It should cover first the operating expenses, whatever they may be and then it should cover a fund which should be set aside to cover the depreciation of the plant to be termed a renewal fund; that, I think, should amount to 2% per annum of the value of the plant. That should be set aside as a depreciation fund for the purpose of keeping the plant up to a high standard of efficiency and practically in as good a condition as when it was first installed. I arrive at that two per cent. by the presumption which is quite universally accepted, that the life of a water works plant is forty years, that the average life is 40 years; this depreciation per annum would be 2½% of the value but two and a half per cent. of the total value of the works is not to be set aside as a sinking fund for the reason that the money is presumably to be put out at interest and compounded and if 1½ per cent. of its total value be put out at compound interest at 3 per cent., in 37 years it will amount to the total sum, and 2 per cent, if set aside annually and compounded will replace the entire fund, or reach the amount of the entire fund in thirty years, and as the expenditures have to be made on the plant to keep it up from time to time, during the forty years of its life, and while 2 per cent. per annum, if compounded for the entire life of the plant would equal an amount in excess of the entire value, yet considering that a part of these expenditures must be made previous to the end of the forty year period, I consider that the 2 per cent. per annum
1609 set aside in this fund should meet all of the renewals required to keep the plant in good condition, the same as when installed, practically the same as when installed. In addition to the above two named provisions, the income from the water works plant should yield a fair interest return upon the value of the plant. This interest return should be based upon the current rates of interest at such point as the plant or investment is located; the taxes on the plant may be either included in this interest rate, or they may be included in the operating expenses."

Q. Does not this statement appear on pages "18" and "19" of your deposition?

A. I will answer, yes.

Q. Then on page "19" of the same deposition, I will ask you if this question and answer is not made: "In Exhibit to the deposition of John W. Hill filed in this case the following item is found, in addition to the items which you have mentioned 'Sinking Fund charges on $1000.00 of valuation invested and compounded for thirty years at 3 per cent.:' State whether or not that would be a proper charge to be included in the income in addition to what you have already mentioned, and if so, why, and if not, why not? A. I think it should not be allowed for the reason that we have already provided by the 2 per cent. per annum to be set aside for a renewal fund for keeping the plant in a good condition in perpetuity, and if a 3 per cent. sinking fund were allowed on the amount stated, in addition to that to the investors in the Water Works plant, then the investors in addition to having the plant as good

as new, at the end of 30 or 40 years, or any other period, would have all of their original investment returned to them within
1610 the thirty year period and then have the plant, representing the total value of the investment, and it would have cost them nothing."

Q. Did you make that statement?

A. Yes sir.

Q. Now on page "35" of your deposition in the Chattanooga case, and on cross examination, I will ask you if you didn't make these statements: "Q. You say in estimating what the company ought to receive, you allow 2 per cent. simply for renewals, and you allow for the operating expenses, and you allow for nothing else except that? A. Well interest on the investment of course. Q. You allow no return to the investor? A. Yes he has got a good, complete and perfect plant all the time. Q. You don't figure on anything as a fixed interest? A. No sir I don't figure on giving him his money back and keeping his plant intact at the same time; I am not figuring on his paying interest on the amounts he has borrowed, but I am figuring on his keeping up his plant."

Q. Did you not make those statements as contained in that deposition?

A. It appears so from the copy, yes sir.

Q. Now on the subject of "depreciation," did you not make these statements on pages "36" and "37" of your deposition in the Chattanooga case: "Q. Mr. Ludlow, your account for renewals, as you call it, is simply the same thing as a depreciation account? A. Yes, the same thing. Q. Now I will ask you if it is not a fact that that simply provides for the ordinary renewals, that is for the wear and tear and renewals of that kind? A. No, I think not; the proposition is that if the life of the plant is forty years,
1611 then 2½ per cent. per annum spent on the plant during that term will provide for all the depreciation; that is it wont do it all in one year, but stretched over the life of the plant, it will cover all of the renewals and depreciation of the plant during that time. Q. That is the average? A. Yes sir. Q. Would it cover the expenses of break-downs and things of that kind? A. Well, if there is a break-down the expenses should not amount to very much in a properly designed plant until the pumps and engines and things of that sort have practically exhausted their life, and they become useless from breaking down, or from impairment, then they should be relegated to the rear and new pumps provided in their stead. Q. You think a depreciation fund of 2 per cent. would constitute a fund sufficient to renew the plant at the end of forty years? A. Yes, to renew it along through that period and also to take care of the different accidents that might happen. Q. And take care of the accidents? A. Yes, I think so."

Q. Now I will ask you if you made that statement?

A. Yes sir.

Q. Mr. Ludlow what is the ordinary life of an engine?

A. Well sir the life of an engine will vary with the class of the

engine and the make of its manufacturers. One engine will have a much longer useful life than another, according to the character of the workmanship.

Q. Well, about how long is the ordinary life of an engine?

A. I think sir that a good water works pumping engine should be considered to have a useful life of not less than 20 years. This however might be shortened by reason of the phenomenal growth of the city and increased demands on the machinery, requiring
1612 it to be operated so continuously and at such speed that the wear and tear would be excessive and consequently the life of the machine shortened.

Q. A properly constructed water plant should contemplate an increase of population and provide for same to some extent shouldn't it?

A. If the census records were made in advance that could very well be done, but we can never anticipate absolutely what future conditions may be. Prudent men will undertake to determine that so far as practicable, but even though it is thus determined, it is not always good business quality to install machinery that will fit conditions 10 or 15 years hence, for the reason that the interest account during that time on the increased cost might be in excess of what it would cost to put in new machinery at that time such as the demands may then require; so that it is not possible always to anticipate and to provide machinery and other functions of a water works plant to meet future requirements. Besides this the growth of different cities and towns is quite variable, and future conditions in one case might be ample or in excess of the requirements while in another case they would be deficient.

Q. Mr. Ludlow, you have seen Gay street here and its situation with reference to the town, and the buildings on it; that is the main business street running north and south?

A. By the Imperial Hotel?

Q. Yes sir, you have seen that street have you not?

A. Yes sir.

Q. For the purpose of supplying water for store, elevators and fire purposes what sized main ought to be placed on that street in its present condition?

A. I couldn't answer that question without more data
1613 upon which to base an opinion. It would depend upon other and correlative conditions.

Q. Let us supose that it is the chief business street of the town, having retail and wholesale stores requiring elevator service, quite a number of them from four to six stories high, what would be a sufficient main upon a street of that sort?

A. I couldn't determine it upon that data.

Q. Well what data could you determine it upon?

A. I do not think that a proper size of pipe could be determined upon for that street except by a very thorough and exhaustive calculation as to the relative cost of cast iron in the ground, the cost of coal in pumping the water through different sized pipes and further the different sized pies in various parts of the city which may be

considered as supplementing whatever pipe line may be on Gay street, and even with all that date that an engineer might consider essential to a conclusion, would still give different conclusions to different engineers.

Q. You then would not volunteer an opinion as to the sized pipe that should be on Gay street?

A. No sir I could not.

Q. Do you know what is essential to obtain first class insurance rates on a street of that sort as to the size of pipe?

A. No sir I do not. I do not think there is standard named by the Insurance Companies; in fact I am almost positive there is not. An insurance company may come and arbitrarily tell you that you must have a certain size pipe, but that will not be based upon any general rule of practice, I do not think.

Q. It ought to be large enough to afford a water supply for a fire engine?

A. Oh yes sir, for fire engines with which to fight fire.

1614 Q. In your construction of water works, do you ever feed a 10 inch pipe with a 12 inch pipe?

A. Oh yes frequently.

Q. Will any more water go through a 10 inch pipe when it is fed by a 12 inch than if it were connected to the works?

A. No sir, no more will go through it. The amount of water that passes through a pipe depends upon the pressure behind it.

Q. Do you know what the pressure afforded by this plant is?

A. No sir, I do not.

The further taking of this deposition was adjourned until Thursday morning, January 29, 1903, at 9 o'clock A. M.

1615 THURSDAY MORNING,
January 29th, 1903—9 o'clock a. m.

The further taking of this deposition resumed.

Continuation of cross-examination of J. L. LUDLOW:

Q. Mr. Ludlow you say that you make a distinction between investment or invested value or cost of replacement. Will you define what you have in mind by investment value or invested value as used in your deposition?

A. By investment value I mean everything that has been put into the works in construction to begin with, including the cost of all materials, of labor, supervision and administrative charges, whichever form they may have taken, and in the event the works have been operated at a loss or the revenues had not been sufficient to pay the operating expenses of the works and interest upon the money borrowed for the purpose of building the works, I should add whatever deficit there may have been in meeting the operating expenses and interest charges against the cost of the works or of money borrowed, to the investment cost or rather the investment value of the works. In other words every dollar for which the works had become liable, either for the purposes of construction or the purposes of operation, I should count against the works as a liability and the necessary

amount expended in the works in order to bring it up to its present condition.

Q. Then you add in the losses which the company may have sustained from operation to make up the investment value?

A. If in the operation it was necessary to borrow money to make up deficits and keep up the works it would necessarily be a portion of the investment value.

Q. Now to define your meaning more clearly, I will ask you supposing that a plant has a two hundred thousand capitalization and that is sufficient to build it without borrowing any money, and suppose that its earnings are sufficient to meet the operating expenses and the 2% or depreciation but not sufficient to pay 6% on the capital stock, or any per cent. we will say upon capital stock, what would you do in that case?

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A. Assuming that the $200,000 had all been expended in building the works, I should consider the works liable to whoever furnished this $200,000, whether it be the stockholders or bondholders, or money borrowed from the banks, and they should have a return of a reasonable interest on the amount furnished the company, and where the earnings were not sufficient to pay this interest I should recognize it as a liability and a debt of the company to be placed in the cost or investment account of the works.

Q. Then in the case supposed you would add to investment value $12,000 for the 6% dividends that should have been paid to stockholders on their stock, would you?

A. I should, for the reason that the water works company is something apart and distinct from the persons who furnished the money to bring that plant into operation. It is something, or a better term I would designate it as a corporate entity, created by a charter with certain privileges, certain functions and certain obligations, and when this corporation borrows money from any one, either holders of the stock or other persons, it matters not whom, that company, plant, or corporation is also liable to these individuals for the amount of money borrowed and is liable to these persons for an annual return on that investment, and unless the plant is able to earn the money sufficient to pay this annual return, it is indebted to these persons to that extent and should pay them at some future time from future earnings and until this indebtedness is so paid, it should be charged up against the works as a debt or liability.

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Q. Then you place the right of the stockholders to receive the 6% dividend on the same basis as the right of creditors to receive the stipulated interest on money loaned to the corporation?

A. Whatever rate of interest is allowed for such investments, I do.

Q. And you regard this claim of stockholders to a 6% dividend as one that should enter into the investment value and be met by water rates do you?

A. I do, yes sir.

Q. Suppose the company has been running at a loss for say 10, 15 or 20 years, you would add in this 6% dividend to stockholders for all the years accumulatively?

A. In fixing upon a rate of interest I should take into account every character of the debts owing to individuals, whether they be stockholders, bondholders or other persons interested in the plant who held evidences of debt against it in the shape of the company's notes.

Q. I say if you were called upon to fix the reasonableness of water rates in 20 years, you would treat all of these deficiencies in the payment of dividends to stockholders at the rate of 6% as entering into the investment value upon which a fair return should be made?

A. I should recognize all those charges as a reasonable allowance for investment value.

Q. Under that principle an unsuccessful water plant would soon become a very great burden to water consumers, wouldn't it?

A. Not necessarily. Water rates cannot always be said to be fixed at an amount sufficient to pay the interest on the total investment. It may be much less. A water plant may be
1618 easily conceived as never being able to pay such an amount, or to ever return the total amount of money invested; yet, the investment would be represented as above indicated whether they got the money back or not.

Q. But a plant would be an unsuccessful one that didn't pay these things?

A. Yes sir it would be an unsuccessful plant.

Q. Then you recognize that reasonable rates may be fixed at much less than what would pay these charges that I have spoken, of do you not?

A. By law they could not be so fixed, I think. They may be so fixed as a matter of policy on the part of the water company.

Q. Isn't this true that if a water plant is unsuccessful for 10, 15, or 20 years, where it is situated in a city from ten to thirty thousand inhabitants, that one, two or three things is true; either that it cost too much in its construction, more than it ought to have cost, or that it has been injudiciously located or has been extravagantly operated?

Mr. CALDWELL: We object to the question as irrelevant and not of a character to *il*licit information of any value in this case.

COMMISSIONER: I will allow him to answer.

A. I should have to answer that in the negative, as there may be other reasons why the plant is not successful.

Q. Well what other reasons?

A. It may be as we discussed yesterday that the future had been anticipated and that the plant had been built anticipating future conditions to meet the requirements and that those requirements have not materialized and that the number of consumers expected were not realized, and with the rates established the revenues
1619 could not be sufficient to meet all operating expenses and fixed charges; or it might have been that the most available source of supply was of such high cost that local patronage could not be built up to a sufficient point to furnish revenues sufficient to meet operating expenses and fixed charges.

Q. Any other reasons that you know of?

A. Well I think I could figure out some other reasons, but they would be largely based upon these generalizations that I have given.

Q. Now in your work of fixing investment value as a basis upon which a fair return shall be made you burden, do you not the water rates of the city, not only for operating expenses and depreciation but in case the plant is built out of money contributed by the stockholders for 6% dividends upon the stock, do you not?

A. I do, yes sir.

Q. And where a plant has been in operation, 10, 15 or 20 years and the inquiry is touching a particular year, you burden the rates of that year with any deficiencies that may have occurred in previous years, do you not?

A. Not entirely; for that year only, but for the interest charges on that deficiency that may have existed previously.

Q. And you speak of deficiencies arising from losses in this connection?

A. Yes sir, from failure to pay reasonable returns on the investment from year to year.

Q. Now suppose that instead of operating at a loss the company had really realized from 10% to 15% dividends on stock; what would you have done with that?

A. There would be no additional charge to investment value in case they had received returns on the investment.

Q. But in case, suppose they had received double or two and a half times the amount you have fixed, would you credit that
1620 to construction account?

A. No sir, I believe not; I believe that under the laws that restricts a company to receive no more than a certain return on their investment and gives them no guarantee of any return whatever, that if by a failure on the part of the city to see that the rates are not excessive and the company gets a little more than the rates recognized as reasonable, that they are entitled to it and ought to have it for the risks they take.

Q. But they do not take any risk if each year is to be made off of the succeeding years, do they?

A. They do not, presuming that to be the case, but they may figure on that being the case without it ever materealizing.

Q. Suppose the water company has exercised with perfect freedom the power, and that it has had full power to fix water rates of its own choice during the entire period, then your reasons would not prevail, would they?

A. Yes sir, they would, because the amount of revenue derived from the operation of the works does not depend solely upon the rates fixed so high that people will not patronize the company by taking water in the quantity anticipated that it would be taken, so that the rates may be less than the revenues required, even though the rates were fixed very high. In other words, it is recognized as a matter of policy in water works companies that rates should not be fixed at such a high plane that consumers cannot be obtained.

Q. In other words, a rate that is accepted by the people though

lower than another rate that is not accepted as reasonable, is likely to yield a greater revenue, isn't it?

A. I think so.

1621 Q. Then, upon your theory, although the Water Company had abundant power and exercised it without interference to fix its own water rates, yet if twenty years ago it sustained a loss from operations, you think that that loss ought to be made up to the extent of paying interest on it by the water rates to be fixed by the present year?

A. I think when conditions become such, and consumers become sufficient to pay operating expenses and fixed charges, at reasonable rates, that the losses incurred in the bringing up of this plant to this basis should be recognized as a legitimate liability against the works, and provision for their payment be made in the current rates.

Q. It by no means follows that a reduction of rates results in a reduction of revenue, does it?

A. Not necessarily; if the rates are excessive, then the lowering of rates would very likely increase the revenue; on the other hand, if the rates are reasonable, and such that they are not burdensome to consumers, then a lowering of the rates would decrease the revenues.

Q. A rate that is generally accepted by the community as reasonable will command a much larger water consumption, will it not?

A. It will yield a larger number of consumers, I think, yes, sir.

Q. Now, Mr. Ludlow, I think I have gotten your idea of invested value; on what do you calculate, or should be calculated the 2 per cent. for supplying depreciation in the plant?

A. I think that should be based upon the actual cost of the plant, as near as it can be determined. It is not an error however that that should be a little more or a little less than the original cost,

1622 for when it reaches the point where replacement is necessary, the cost of replacement is not likely to be the exact original cost; it may be a little more or a little less; so that to meet that condition, I should say that 2 per cent. depreciation should be based upon whatever is recognized as the investment value of the plant, without any hardship or great error in so considering. Of course you understand that 2 per cent is absolutely fixed but you cannot determine that it is absolutely sufficient.

Q. But I am assuming in my questions that it is the per cent. allowed for that purpose at present. Now you would calculate that 2 per cent. upon the actual cost of the works, wouldn't you?

A. I think that is the most rational basis, but I say I don't think it would be great error to count it upon what the investment value would be.

Q. Well nothing suffers depreciation except the plant?

A. The plant itself.

Q. Or any losses sustained, there is no depreciation upon that?

A. No, sir.

Q. Now, Mr. Ludlow, you said something about the value of the plant, I believe you did, depending to some extent upon the rates.

It is a fact that the rates have something to do with the value of the plant at a particular date, is it?

A. Not the investment value, no, sir, they do not.

Q. Would not the raising of water rates have a tendency to raise——

A. Not the investment value, no, sir.

Q. Would it raise the actual value of the plant?

A. Nor the actual value.

Q. Nor would the reduction of rates lower the actual
1623 value?

A. No, sir, it would fail to yield a return upon the value.

Q. The values remain the same?

A. Yes, sir, the values which you have designated.

Q. Mr. Ludlow, you have spoken of certain percents to be added onto construction account for engineer's services and contingencies. If these amounts were added onto construction, then the engineer and these other percents should not be likewise paid out of the expense account, should they; they shouldn't enter into both accounts?

A. They should be counted as a part of the cost of the works.

Q. It would be improper to pay them out of operating expenses where they are allowed in construction account at a per cent., wouldn't it?

A. If the expenses had not been paid during the construction of the plant, I think it should be considered like any other debt of the plant, and be met from the future earnings of the plant.

Q. But it should enter into construction account and not into operating expense account?

A. Yes, sir, it should be in construction or investment account. Of course where there are increases made from year to year and the plant is considered such as to require current engineering services, that would then be a part of the operating expense.

Q. But not as regards additional construction, would it?

A. Oh, yes, as regards additional construction.

Q. Have you calculated the same per cent. on additional construction as on original construction?

A. Well, if they have been paid, that is true—in making
1624 an estimate I would add the same per cent. to additional construction as original construction, but if as a matter of fact the work is being done from year to year, the engineer's expenses should be paid, and if not paid from current revenues, it should be counted as a debt against the work as a portion of the investment value.

Q. But it shouldn't enter into both operation and construction accounts?

A. It shouldn't be paid twice, and neither should it be charged in two accounts.

Q. And you have put it into construction accounts in both statements you have made?

A. In all statements I have made, I have put it as a portion of the cost of the works.

Q. Mr. Ludlow, you have said something about marketing or negotiating water works bonds, and in that connection you have said that water works bonds are not favorites in the market. Isn't that largely because of the vicious methods that have been adopted in financing water works in this country?

A. No, sir, I don't think it is much due to that, if any. I think it is due to the fact that they are not looked upon in the financial world as good and certain securities.

Q. Well, let me put at you a case. Suppose a water company situated in a city of from 10,000 to 20,000 inhabitants constructs a plant with a capitalization of $200,000, out of its capitalization having the rights of way on streets donated to it by the city. Do you think there would be any difficulty in negotiating at par as much as $125,000.00 bond issue, bearing 6% interest, and the streets donated?

1625 A. Well, that would depend upon a great many conditions the character of the town, the probability of the increase or growth of the town, the probability that the citizens were such as would patronize the water company and the probability of the company being able to earn sufficient to pay the interest on those bonds.

Q. Well I have given you a city of from 10,000 to 20,000 inhabitants?

A. Well, cities are variable; some cities are looked upon as a good basis of water works investments while others might not be; at least one city may be looked upon much more favorably than another to an investor.

Q. Well ordinarily in the case proposed, the bonds ought to be perfectly good at par, oughtn't they?

A. I don't think they are so recognized in the market.

Q. Six per cent. on a works of $200,000 capitalization, in a city from 10,000 to 20,000 inhabitants with rights of way donated by the city, there would be no difficulty in negotiating at par as much as $125,000 bond issue, bearing 6%, is the case I put to you?

A. If that were the only bond issue that could be made against the works; if it were a prosperous community and the rates allowed in the franchise were favorable and all the requirements to make these bonds legal, had been met and the contract with the city was a legal one, I think it would be a fairly good security to market, but that is a large line of conditions that I have named.

Q. But with all those conditions complied with, they would be worth par on the market?

A. I am not so sure, but I rather think they might be, but I wouldn't guarantee to find a market for them.

1626 Q. Mr. Ludlow, on page "19" of your deposition in this case, I find under the head of "Reservoir" an item which in the aggregate amounts to $27,720. What reservoir is that?

A. The one on Reservoir Hill near the standpipe.

Q. The reservoir involved in the original construction of the plant is it?

A. I presume it is.

Q. Who furnished you the data from which you made this estimate?

A. I measured it.

Q. I see one of the items is 1,700 cubic yards concrete bottom and lining. At what did you estimate this concrete; it does not appear in your statement?

A. It is market there at $10.00 a cubic yard; that is put on in thin layers or linings and not in large mats.

Q. How thick?

A. I don't know what thickness exactly; I think about 10 or 12 inches thick.

Q. On the sides and bottom?

A. Yes, sir.

Q. Well what thickness did you estimate here?

A. About 10 or 12 inches.

Q. Well was it 10 or 12 inches?

A. It will vary; you cannot put concrete on exactly the same layer.

Q. Well you adopted one or the other of those figures didn't you?

A. I may have taken the mean between them; I am not certain, sir.

Q. I see an item of 10% contingent on account of bad bottom. How did you get the information about that?

A. Well I had heard of the breaking of the bottom of that reservoir at one time since its construction, and knowing that this lime stone formation in this country is liable to be faulty and that it is a hazardous undertaking to establish any great weight upon it, to meet a risk of that character involved I added 10% to reinforce the bottom and to meet any break that might occur.

1627 Q. What break do you refer to?

A. My information was that the bottom had fallen out of this reservoir at one time.

Q. Where did you get that information?

A. I do not remember sir, specifically; I have heard of it for several years.

Q. Did your informant also tell you about them finding unopened bags of cement in it at the time it broke?

A. No sir, I never heard of any such extravagance having been committed in its construction.

Q. Well if such extravagance was committed it would be a faulty construction?

A. Good cement makes a very good construction.

Q. But the bags being found in there unopened?

A. The bags wouldn't make any difference.

Q. But is that the proper method of putting it in?

A. It is not proper to put cement in in many cases that I know of. There is this condition arising in some instances where there is an encroachment of water, and the only way to keep the water off of the work that is being completed is by means of a mass of some impervious material—pure cement in sacks—is sometimes used for that purpose.

Q. Do you leave it in as constituting a part of the bottom?
A. Yes sir, and it is rather an expensive way.
Q. But there wouldn't be any necessity of being troubled with water on top of that hill up there, would there?
A. I shouldn't think there would be unless there were some springs around there.
Q. Did you ever hear that there were any springs or water to be encountered about there?
A. No sir.
Q. So this contingent item of $2520.00 is based upon information you had about the reservoir?
A. Yes sir and upon my judgment of the risk incurred
1628 on account of the local geological formation.
Q. Mr. Ludlow what is the effect on the flow of water of an elbow at right angles in a pipe?
A. There is an increased frictional resistance to the water over what it would be in a straight pipe.
Q. What is the effect on a flow upon a straight pipe of the same dimensions and length and of a pipe with an elbow in it of the same size and length?
A. Well with the same initial pressure the amount of water delivered at the end of the pipe line would be some less with a pipe that bends than one that is straight.
Q. How much less?
A. I do not know sir.
Q. Is there no rule in hydraulic engineering by which to determine this?
A. Yes sir, there is a rule to the effect that a bend is equivalent to a certain number of feet in a straight pipe but I do not recall what it is. It varies with the character of the bend, whether it is a short radius or a long radius bend.
Q. Is it proper construction to feed a smaller pipe with a larger one?
A. To feed a smaller one with a large one?
Q. Yes sir, where there is no intervening pipe to be fed by the larger pipes between the water supply and pipe to be fed?
A. Oh yes sir, that is proper construction.
Q. Well now is it proper construction to feed a larger pipe with a smaller one?
A. That might be in some cases, yes sir.
Q. In what case would you feed a larger pipe with a smaller one?
A. Well if I had erected a works and had fixed upon a certain size of the main leading from the source of water supply, the reservoir or whatever it may be and the growth had later required a pipe
on the same street which had not been included in the origi-
1629 nal construction, or required more capacity, it would be very proper to replace the pipe on that particular street with a larger size without necessarily increasing the size of the pipe leading from the main source of supply. It would be better to increase both but if confined to enlarging to either one or the other, enlarging the pipe which is feeding improves the conditions that existed with the smaller pipe.

Q. Does it make any difference as to the carrying capacity of a pipe say of 10 inches, as to how many feeders it has—I mean as to the quantity of water it would deliver?

A. Yes sir, a very material difference. The more feeders and the closer together they are the more water which can be obtained from that pipe at a fixed initial pressure.

Q. Well would not one pipe feed itself to the full extent of its capacity as well as a dozen. For instances would not a 10 inch pipe from the reservoir to a point of delivery furnish all the water that can be drawn from the pipe anyway?

A. No sir. To illustrate that, I think I understand the information you desire, if a 10 inch pipe starts on Gay street at the river with the initial pressure due to the reservoir and comes continu-sly up Gay street, as the water passes through the 10 inch pipe a certain portion of that initial head or pressure is lost, due to the friction resistance in the pipe itself in the passing of the water. There is a limit in the number of gallons of water which will pass through that long line of 10 inch pipe with its initial pressure and you can conceive it, and it is a fact that if that 10 inch pipe was continued long enough you will only get a very few gallons of water from the pipe whereas at some intermediate point you will get a larger number of gallons due to the less friction resistance. If you reinforce, then the whole volume of water does not pass through the entire
1630 length of the pipe and the resistance is less.

Q. Well isn't it true Mr. Ludlow that cross currents at the various points where other feeders come in are themselves a resistance that have to be overcome in the flow of the water?

A. Well there is some little cross current that would impede the flow of the water but not very materially.

Q. The water that comes in from cross currents is pressing directly across the pipe and not in the direction the water is flowing?

A. Water will always take in the direction of least resistance.

Q. Mr. Ludlow an 18 inch pipe fed by a 10 inch pipe will not deliver any more water than a 10 inch pipe will it?

A. I think that you have a different impression from mine as to the terms of delivering water. A pipe can hardly be said to deliver water simply from its size, neither does the size govern the amount of water that can pass through it.

Q. In other words there cannot any more water go into an 8 inch pipe that is fed by a 10 inch pipe than can pass through a 10 inch pipe?

A. Oh no sir.

Q. It would be a proper thing to reinforce that 18 inch pipe with another pipe?

A. Yes sir.

Q. And on the other hand a 10 inch pipe fed by a 12, 14, 16 or 18 inch pipe would not deliver any more water than a 10 inch pipe would deliver, would it?

A. Well you will get more water at the same pressure if the 10 inch pipe is fed by a larger one from some point to the initial source of the water, namely: the reservoir for instance, considering the reservoir to stand on reservoir hill and an 18 or 16 inch pipe leading

straight into Gay street to a 10 inch pipe going along Gay street, you will get more pressure at any point on Gay street, or
1631 more water at a less pressure than you would if the feeder from the reservoir to Gay street were a 10 inch pipe?

Q. What is the rule in hydraulics on that subject?

A. There is no rule. The frictional resistance of various sizes of pipe has been determined by experiments. There are elements in that formula that are based upon such experiments.

Q. Mr. Ludlow, in consolidating any three separate plants and adjusting them to each other, the original construction cost as separate plants would necessarily be greater, wouldn't it than the cost of a like plant originally constructed as a whole?

A. As the question stands, I think they would be the same. You ask as "a like plant" originally constructed as a whole. A like plant would involve all the elements of the three separate plants.

Q. Isn't the cost of adjusting three separate plants constructed for different sized towns, for the purpose of being operated as one plant, considerable?

A. Not necessarily; it may be only cutting in a half block of pipe to join the two systems up.

Q. Is it not necessarily made up of piecemeals, and is not so well adjusted in its parts, nor so economically built as if it had been originally constructed as one plant?

A. That is not necessarily the case.

Q. Now Mr. Ludlow, if this plant had been originally designed as one, and having erected a stand-pipe here in the city, would it have been necessary to have placed a stand-pipe some two miles beyond the city?

A. It may have been very necessary and proper, yes sir.

Q. You say it "may have been"?

A. It may have been, yes sir.

Q. Well wouldn't proper construction have placed that stand-pipe nearer the source of supply?

A. Not necessarily, no sir.

1632 Q. Well what additional pressure does it require to deliver the water two miles beyond the city, that passes through the country to be supplied and then sent back?

A. I cannot conceive of the water being sent there and being sent back. The presumption is that it is sent to that point and used in that vicinity. However if it should come back, there is no additional cost of sending the water there. A water works plant is supposed to be operated against a certain static pressure, and the cost of furnishing the water, no matter where it goes, is based directly upon the pressure which is furnished.

Q. Then your hypothesis is that this additional stand-pipe would be proper is based upon the other hypothesis that it is necessary to have it there for delivery of water in that section?

A. It may be there *there* is a high point in some vicinity where there is no consumption near-by, where a stand-pipe can be erected economically for the purpose of maintaining certain static pressure upon the mains.

Q. Well suppose that the points where the water is to be delivered

is much nearer this stand-pipe than that one; would there be any necessity for the two?

A. I couldn't answer whether it would be a necessity or not. That would be purely an engineering problem as to the intent in the design of the works. I don't think I could give an opinion upon that question without further data.

Redirect examination by Mr. CALDWELL:

Q. Mr. Ludlow, would it be possible to construct a pipe system for the Knoxville Water Company so as to serve the City of Knoxville in one unbroken continuous straight line of pipe?

A. I think not sir.

1633 Q. You know the situation of the reservoir here, do you?

A. I do.

Q. What is the proper way to bring water from the reservoir to Gay street?

A. That is purely a matter of opinion of the engineer designing the plant. My idea, while not criticizing the engineer, or knowing just how it is run, would be to start from the reservoir with large sized pipe, one or more, and approach in the direction of Gay street with a large size pipe. When I reached a street where some water would be required, I would run a line of pipe out from that, and as I reached the next street I would do the same thing; each of those lines I would continue as far as the conditions would warrant, and then return them into Gay street, reinforcing the mains to Gay street piping, continuing the original pipe of course to Gay street.

Q. Then those pipes starting from the reservoir, would strike Gay street at an angle?

A. Necessarily, yes sir.

Q. In preparing your estimate of replacement in this case, you have said that you made some measurements and that you took some quantities from the statements of the Water Company. I will ask you if you aided yourself any by an examination of the plans in the office of the Water Company?

A. I did.

Q. Mr. Ludlow, you do not know whether or not there were as many plans made and as expensive surveys shown of the property in Chattanooga as you have found here?

A. I don't remember of seeing anything like the number at Chattanooga.

Q. Looking to the general character of construction here
1634 and the comparative character of the works here and at Chattanooga, are they of the same grade or is either better than the other?

A. I think the character of construction in the Knoxville Works is a very high order indeed.

Q. Well as compared with the works at Chattanooga?

A. I think it is superior; in fact quite superior.

Q. What was the cost of pipe September 30th 1902?

A. I think $32.00 was the market price in Knoxville.

Q. Please look to your exhibit in the Chattanooga case to that part

which refers to the prices of pipe, and state whether or not the prices set out there make any allowance for contractor's profits?

A. I am quite sure that the price fixed at $24.00 per ton, and the price of laying &c. from which the total item was made, did not include any contractor's profit, but that 10 per cent. was added to it including cast iron pipe.

Q. I will ask the general question, why it is that the prices estimated by you in the Knoxville plant for the year September 30th 1902 are in some respects higher than the prices estimated by you in Chattanooga in 1900?

A. Because of the fact that material costs more at this time than in 1900, and the cost of doing work is greater than at that time.

Q. I notice that in your statement of the cost of replacement, at the end of the summary statement, you state that in the above estimate there is no allowance among other things for contractor's profits for furnishing cast iron pipe. Under what circumstances would it be proper to make allowance for contractor's profits on cast
1635 iron pipe?

A. It would, generally speaking, be a legitimate allowance to make. In the event the works were being built with the money in hand, the cast iron pipe might be bought independently of a contractor, in which event then the allowance would not be necessary in making up the cost of the works. If the cast iron pipe were furnished by the contractor—if he contracts to do a complete job of work, then he would figure some percentage of profit on the total cost, including cast iron pipe.

Q. Did you make any additional allowance in the Chattanooga case for the cost of specials?

A. Yes sir, I allowed for specials at 2 per cent. of the total tonnage of pipe, and in that case I allowed an increased price, viz: $50.00 per ton.

Q. Now what did you allow in the Knoxville case?

A. I allowed practically the same thing. I allowed 2 per cent. for total weights for specials and allowed a price per ton double the cost of straight pipe, which was equivalent to allowing 4 per cent. on the total cost of straight pipe for specials.

Q. Then as I understand you, the allowance you made for specials at Chattanooga is the same as you made here?

A. Yes sir, there is a slight difference and that difference is in favor of Chattanooga as I allowed a little more for weights.

Q. You based the one estimate on weights and the other on cost, as I understand?

A. Cost and weights, yes sir.

Q. If you had used the same weights in making your calculations on the pipe line in Knoxville as you used in Chattanooga, would it have affected the price per foot?

1636 A. It would have increased the price per foot for most all the sizes.

Q. You were asked upon cross examination as to the probable quality of water works bonds as securities, upon the supposition that $125,000.00 of bonds were issued now upon a capitalization of

$200,000.00, the bonds bearing six per cent. interest. I will ask you if it would make any change in your answer if the fact were that these supposed conditions were not as of this date, but of the year 1882, or 1883 and were for the original construction of a plant?

A. I understood the former question to be based upon the original construction of the plant.

Q. Do you know how such securities sold twenty years ago?

A. I think they sold much better than they do to-day.

Q. That water works security had not been called into question then so much so as later?

A. No sir, but I am not so familiar back as far as 1882 or 1883; I am more familiar from 1885 to years upward, and at that time water works securities found quite ready sale with liberal discount.

Q. Have you known of any case that far back where water works company bonds, issued for original construction and in advance of the completion of the plant, sold without a discount?

A. No sir, I don't believe there were such sales made.

Recross-examination by Mr. PICKLE:

Q. Mr. Ludlow, what proportions of the cost of cast iron pipe as laid in the street, are for the pipe itself and what for the other labor and expense of laying the pipe, estimating pipe say at $24.00 a ton?

A. I couldn't fix any certain proportion covering the pipe system; I think it would vary with different size- of pipe. The price
1637 of the pipe itself is shown from this analysis of mine, which has already been submitted.

Q. But now, about what would be the cost in addition to the cost of pipe, of laying say a ton of 20 inch, 16 inch and 12 inch?

A. It appears that about 80 per cent. is covered in the pipe itself and 20 per cent. in the cost of laying. That is readily deducted from this analysis, General Pickle, giving the total weight of pipe and the price of pipe.

Q. The buildings in the Chattanooga works were well constructed, were they not, and out of a good quality of common brick?

A. Well they were not very well constructed, no sir.

Q. But a good quality of common brick?

A. No sir, not very good; the construction there I thought was quite poor, as a rule. There may have been some little good construction, but the most of it wasn't what you would term good construction.

Q. They used common brick there in that construction?

A. Very common, in some cases.

Q. And vitrified and other classes are used to a large extent in these buildings here?

A. Yes sir.

And further deponent saith not.

Sworn to and subscribed before me, this — day of —— 1903.

The further taking of depositions was adjourned until Friday morning January 30 1903 at 9 o'clock A. M.

1638 MONDAY MORNING, *February 2nd*, 1903.

The further taking of depositions was resumed.

The next witness ARTHUR HIDER, called on behalf of the plaintiff, having been duly sworn deposed as follows:

Examination by Mr. CALDWELL:

Q. Please state your name and place of residence?
A. My name is Arthur Hider; residence Greenville, Mississippi.
Q. What is your profession?
A. Civil engineer.
Q. Are you a specialist in the department of civil engineering?
A. I have had a great deal of experience in a good many classes of work.
Q. Have you had any experience as a hydraulic engineer?
A. Considerable.
Q. How long have you been practicing your profession?
A. Since I was twenty-one years of age; about thirty-five years.
Q. What kind of work are you now engaged in, and how long have you been engaged in it?
A. I am now engaged in Improvements on the Mississippi River; I have been engaged in this particular work since 1879.
Q. Under private or public improvements?
A. Under employment of the United States Government as principal assistant engineer in local charge of about 220 miles of river improvements.
Q. Are you a member of any scientific society?
A. I am, and have been a member of the American Society
1639 of Civil Engineers since 1883.
Q. What, generally speaking are the qualifications that are necessary to a membership in that society?
A. The exact qualifications I do not remember just now, but practically it amounts to this that a man should have had before he can become a member of the society some five or six years' practical experience in designing and supervising engineering work of magnitude; that he should have been in the engineering profession I think, I would not be positive about it, about 10 years before he is eligible to full membership.
Q. What generally speeaking is the kind of work you are performing for the Government now on the Mississippi River?
A. The particular kind of work that we are now engaged in is the improvement of the channel of the river, dredging, revetting the banks and building levees. I have had considerable experience in gauging the river and in hydraulic work.
Q. Have you ever designed a water works system?
A. I have designed the water works system at Greenville, Mississippi, which has been in operation for the last five years, also one for Lake Providence, Louisiana.
Q. Have you had any experience in sewer construction?
A. From the year 1866 until 1876 I was assistant engineer of the city of Louisville, Kentucky, a greater portion of which time I was

principal assistant and practically had charge of all sewer construction, streets, bridges, railroad connections, &c.

Q. Have you ever been upon any professional work requiring you to supervise or to have a knowledge of the laying of distribution pipes of a water company?

A. I was employed sometimes with Mr. Hermany, Chief
1640 Engineer of the Louisville Water Company, and under contract partially build the gate house of the reservoir.

Q. How about the water pipes; did you have anything to do with the laying of water pipes?

A. For some three or four months I had something to do with it.

Q. Have you constructed any other kinds of municipal works or had to do with them after construction?

A. I constructed recently, this last year an electric light plant and am consulting engineer on a sewer system in Greenville, have had designed and built numbers of barges and a steel tow boat for the Government, which is in operation, and recently designed one which is being now put under contract.

Q. Have you ever served in any capacity in connection with the valuation of a water plant?

A. Yes sir, I was employed with a committee of two other engineers, of which board I was the Chairman, to value the water plant at Memphis, Tennessee, and to examine into their water supply with a probability of it remaining permanent (which is artesian water, remember, there being a number of wells) and made a report at least the board did which was accepted by, the city authorities, and as a result of that report, and the financial expert's report as well, the city has decided to purchase the water plant from the private owners.

Q. What was the value of that plant?

A. Our estimate, if I remember correctly was something over $2,100,000.

Mr. PICKLE: We except to that question as irrelevant.

Q. Do you consider yourself qualified to give testimony
1641 as to the value of water works plants, and to matters pertaining to the construction, operation and maintenance of water works?

A. I believe I am.

Q. When did you first meet Mr. William Wheeler, the President of the Knoxville Water Company?

A. It was some time about the 7th of December 1902.

Q. Hav-n't you the date wrong; wasn't it in November?

A. I have it December; I have no other recollection about it than this memoranda. It may be a mistake but I think it was December.

Q. What time was it with reference to the time of taking Mr. William Wheeler's deposition *in* this case began?

A. It was before that, some two or three days I presume.

Q. Were you in Knoxvile at that time?

A. I was.

Q. Did you make any examination of the plant of the Knoxville Water Company at that time?

A. During the week that I was here I made an examination of all the visible parts of the plant, the pumping station, filter plant, standpipes, machinery and so on.

Q. Have you heard any of the testimony in this cause?

A. I have not.

Q. Have you read any of it?

A. The testimony?

Q. Yes sir.

A. Not any that I know of.

Q. Have you been informed as to the contents of any of it since the depositions were taken?

A. None.

Q. Did you, before you came to Knoxville the first time as testified by you above, receive from William Wheeler, President of the Knoxville Water Company a document containing an analysis and distribution of the property of the Knoxville Water Company
1642 of an estimate of the invested or investment value of said property?

A. Such an analysis was handed me by Mr. Wheeler after my arrival to look over.

Q. Before Mr. Wheeler went upon the witness stand?

A. Before Mr. Wheeler went upon the witness stand.

Q. Did you examine it?

A. I did.

Q. Did said analysis and estimate purport so far as prices of material and labor were concerned to be based upon information taken from the books of the Knoxville Water Company?

A. Generally so; in some instances the prices if I remember correctly were estimated at the current rates at the time.

Q. Assuming that there were no adequate accounts in this company's books of construction cost of its water plant for a considerable part of its history, by what method would you proceed to determine its value at any fixed date?

A. The only method that could be employed would be by estimating the cost at the prices prevailing at that time.

Q. Was that method adopted by Mr. Wheeler in the analysis that he handed you?

A. My recollection is that it was.

Q. If it was necessary to resort to the method that you have indicated, towit, estimating prices of material and labor for particular periods, there being no books to show what they were for a part of the life of the water plant, could you satisfactorily connect such estimates with statements taken from the books of the company, assuming that there were periods subsequently when the company's books furnished the data?

A. It might be difficult to do on account of knowing where to begin and where to leave off. If the cost by the books was for certain items as specifically stated, other items where there was no
1643 record of cost might be closely approximated to their value at that time.

Q. Assuming Mr. Hider that all the books of accounts of the Knoxville Water Company have been destroyed, and that there exists no books or other sources of information from which the actual expenditures made in the construction of the plant can be ascertained, and that the plant exists as it does to-day, and is in operation, would it be impossible to make an estimate of the value of the plant for the determination of rates?

A. It would not, in my opinion.

Q. I will ask you generally to state what you regard as a proper method for ascertaining in a case of this kind what would be fair, equitable and reasonable water rates?

A. I prepared an estimate of the approximate cost of duplicating or replacing the plant as it existed September the 30th 1902, and if you have no objection, I can answer that question in a general way from the memoranda that I have prepared.

Q. Just as you prefer sir?

A. In order to determine the value of a water works plant, for the purpose of fixing rates that would be fair and reasonable, the cost of the original construction and establishment with the additions and extensions, should be first established.

The value so determined would be the cost of the physical parts of the plant, to which should be added interest on the investment, cost of maintenance and operating expense. These items together would give the proper value of the plant or the investment cost to the company and form the basis on which rates should be established.

1644 . Rates fixed on such basis which afford a fair return on the capital invested, if the plant has been economically and judiciously managed in the nature of the case must necessarily afford fair and reasonable rates to the consumer.

These values can only be determined from data derived from the Company's books and records, and from the knowledge of the company's officers.

When such information is not available, a fairly close approximation to the actual value of the useful physical parts existing at the time can be made; but the value thus obtained may be greater or less than the actual cost, depending on the market price of labor and material. In other words, an estimate can be made of the cost of reproducing or duplicating such parts of the present works as would be necessary to afford an adequate and proper water supply to the city.

The value so obtained, when the cost of the plant by the first method is not available, might be used as a basis for establishing rates, for the reason that it would require an investment of a like amount of money to establish a plant to afford the same service.

The value of the physical portions of a water works plant or other plant at the time, would be the cost of duplicating or replacing same. The value of the business in connection therewith should be the value of the time spent and the outlay of money required to establish it. These two items together constitute the value of the plant at that particular time as a whole.

The cost of duplication would therefore depend upon the cost of materials and labor entering into the construction, and might vary to a very considerable extent, depending on the market value of these materials and commodities at the particular time
1645 when the estimate was made.

The following items should be added to the cost of duplication, in order to arrive at a fair value of the plant as a whole:

1. Cost of organization and bringing the business into existence.
2. Cost of negotiating securities to raise funds for the construction of the plant.
3. Interest charges on money used in construction.
4. The value of the physical elements entering into the construction of the plant, viz: buildings, machinery, reservoirs pipes, hydrants.
5. Real estate.
6. Interest on capital invested for operating expenses, not provided for by net income.

The physical value of the plant having been determined, it remains to establish the basis on which the rate-earning capacity of the plant is to be fixed.

It is presupposed that the rates are to produce a fair return on the cost of the plant, and at the same time to be fair and just to the consumer.

The elements entering into the solution of this problem would be those before stated; to which should be added a yearly depreciation charge sufficient to keep the physical parts of the plant in good condition by, replacing parts that become unserviceable from age or require renewal from time to time.

The useful life of the different parts vary. The life of the buildings may be assumed to be from 50 to 75 years; machinery 15 to 20 years; street mains 40 to 50 years; reservoirs 30 years; hydrants and small pipe, 10 to 15 years, making the average depreciation on the entire plant about two per cent. annually.

1646 Exact data on the depreciation of water works plants is not generally available, as many different items enter into their construction the rate of depreciation of which vary greatly.

The abandonment of portions of the plant may have been necessary, also enlargements of the mains; substitution of new machinery of larger capacity; such items as those, as well as the actual physical deterioration due to age or use, properly come under the head of depreciation.

The most rational method appears to be to estimate depreciation on the plant as a whole on its useful life, which may be assumed as about thirty years—two per cent. of the original cost of the plant invested at compound interest, at 2½ per cent., in 33 years, would refund the original investment.

We then have the following elements for determining the value of the plant, as before stated, to which is to be added an annual charge for depreciation:

1. Cost of organization.
2. Cost of negotiating securities.

3. Interest on money used in construction.
4. The value of the physical elements of the plant.
5. Real estate.
6. Interest on capital invested for operating the plant until the business as a whole returns revenue sufficient to pay the operating expenses; and produce a net revenue sufficient to refund the extra capital invested in building up and establishing the business on a paying basis.
7. Annual depreciation charge.

The above items would represent the investment value or capital account.

The income on which fair and reasonable rates should be based, should be sufficient to pay a fair rate of interest on the investment or capital account, after deducting from the gross earnings the following:

(*a*) Cost of maintenance in which are included all of
1647 the expenditures necessary to carry on the works, operating expenses including ordinary repairs and minor betterments.

(*b*) The interest on the bonded debt incurred for original construction and extension.

(*c*) The amount required for the yearly extension of the distributing system.

(*d*) A profit on the investment in addition to the above.

In fixing the value of the plant in order to arrive at a fair rate basis, a discrimination should be made as to whether the rates heretofore have been sufficient in addition to paying for economical running expenses and depreciation to provide for a sinking fund. If the rates have been so high that part of the capital has been returned, the rates should be reduced accordingly to be fair, just and reasonable. If on the other hand the net income has not been sufficient after paying interest on capital and maintenance charges to provide for a sinking fund, a reduction of the existing rates would mean a reduction of interest on the capital invested below a reasonable rate to the company and would not be fair, just and reasonable.

It is undoubtedly true that a fair profit should be returned on an investment employed in establishing a water works plant for supplying a community with water.

The following is an approximate estimate of the cost of duplicating the physical part of the plant of the Knoxville Water Works as it existed September 30, 1902:

1648 *Detailed Estimate of Value, Distributing System Knoxville Water Works, September 30, 1902.*

Water Pipe.

Size.	Feet laid.	Estimated price laid.		
Cast iron:				
20"	2723.3	at $4.00	$10,893.20	
18"	714.9	3.45	2,466.40	
16"	9031.2	2.90	26,190.48	
14"	7607.8	2.40	18,258.72	
12"	41929.3	1.92	80,504.25	
10"	27373.9	1.49	40,787.11	
8"	43748.1	1.15	50,310.31	
6"	119676.7	.86	102,921.96	
4"	45389.1	.59	26,779.57	
3"	27278.7	.52	14,184.92	
				373296.92
Wrought iron:				
3½ inch	250.8	.50	125.40	
3 "	489.7	.40	195.88	
2½ "	416.2	.35	145.67	
2 "	31,034.5	.30	9310.35	
1½ "	5,618.3	.28	1573.12	
1¼ "	5,425.0	.27	1464.75	
1 "	17,787.2	.25	4446.80	
¾ "	7,927.0	.22	1746.14	
½ "	1,517.3	.20	303.46	
				$19311.57
Total				$392608.49

Valves.

Size.	No.	Cost.		
20"	9	$125.00	$1125.00	
18"	1	100.00	100.00	
16"	16	73.00	1200.00	
14"	13	60.00	780.00	
12"	37	40.00	1480.00	
10"	31	33.00	1023.00	
8"	69.	22.00	1518.00	
6"	212	16.00	3392.00	
4"	95	10.00	950.00	
3"	100	7.00	700.00	
			$12268.00	
583 Boxes set at $5.00 each			2915.00	
Total				$15,183

1649 Stop Cocks.

No.	Size.	Price.		
1	2½"	$5.00	$5.00	
58	2 "	3.50	203.00	
11	1½"	3.00	33.00	
15	1¼"	3.00	45.00	
34	1 "	2.00	68.00	
20	¾"	1.25	25.00	
3	½"	1.00	3.00	
142			$382.00	
142 valve boxes and setting at $3.00			426.00	
				$808.00
Total				$808.00

No.	Size.		
1	16 inch check valve	100.00	
1	10 " " "	40.00	
3	1½ " air valves at $10.	30.00	
5 Brick chambers and corners at $25.00		125.00	
			$295.00
Total		$295.00	

Pipe Bridges at Clinch Ave. East	
250 Fire hydrants set in place at $35.00 each	$8750.00
4942 service connections at $8.00 each	39536.00

Meters.

Size.	No.	Value.		
⅝"	1286	$12.00	$15432.00	
¾"	52	15.75	819.00	
1 "	21	21.00	441.00	
1½"	19	41.50	788.50	
2 "	19	62.00	1178.00	
3 "	1	160.00	160.00	
4 "	6	275.00	1650.00	
6 "	3	530.00	1590.00	
	1407		$22058.50	
1407 meter boxes and setting at $11			15477.00	
Total				$37,535.50
Tools and appurtenances				5,000.00

Repaving.

16473 lineal feet of 1st class paving reset 30 cents.	$4941.90	
300000 lineal feet of 2nd class paving reset 10 cents	30000.00	
Total		$34,941.90

1650 Weight of Pipe Service Mains.

Size.	Lineal feet.	Weight per foot.	Pounds.
20 in.....	2723	175	276,525
18 "	715	150	107,250
16 "	9031	125	1,128,875
14 "	7608	105	798,840
12 "	41929	75	3,144,675
10 "	27374	60	1,642,440
8 "	43748	44	1,942,912
6 "	119677	33	3,949,341
4 "	45389	22	998,558
3 "	27279	16	436,464
			14,607,880 or 7,303.94 tons
Two per cent for overweights.....			146.08
Total weight.....			7,450.02

Price of Pipe, 1902.

Tons.	Size.		Price.
2703.99	8 in. to 20 in. inclusive at	$31.10.....	$146,294.09
2014.16	6 "	31.60.....	63,647.46
509.26	4 "	33.60.....	17,111.14
22.59	3 "	36.60.....	8,148.79
7450.00			$235,199.48

$235,199.48 divided by 7450 equals average price of cast iron pipe in 1902—equals $31.57.

NOTE.—Pipe estimate made on the basis of $35.00 per ton, equals $35.00 minus $31.57, equals $3.43 by 7450 equals $25,553.50 to be deducted to equalize prices.

NOTE.—The cost of pipe and laying is based on the following:—Pipe including freights, $35.00 per ton; specials $50.00, labor $1.50 per day, foreman $3.00, calker $2.25 per day, lead 5 cents per pound, teams $4.00 per day, hauling $1.00 per ton, tools 7 per cent. of labor.

1651 Filter Plant.

Buildings 110 feet by 60 feet by 30 feet—1st class—at 10 cents		$19,800.00
Deane Pumping engine	$2700.00	
Smaller engine	900.00	
Foundations and erection	700.00	
		4,300.00
Boiler and stack	$1500.00	
Setting	500.00	
Feed Pumps, pipe connections, &c	700.00	
		2,700.00
Filters, 4½ million gallons		38,500.00
Fencing and grading		1,000.00
Total		$66,300.00

Stand Pipe.

218000 pounds Erected at 6 cents	$13,080.00
Foundations, grading, &c	4,420.00
	$17,500.00
L. B. Stand-pipe and foundation	7,500.00
Total	25,000.00

1652 River Station.

Engine House	$30,000.00
Boiler House	4,000.00
Coal Chute	1,500.00
Pumping engines	37,500.00
Boilers, steam pipes and feed pumps	11,500.00
Stairs, railings, &c	2,000.00
Intake Tower, &c	12,000.00
Total	$98,500.00

Reservoirs.

16,000 cu. yds. excavation, including puddle, at 50 cents	$8000.00
1700 cu. yds. concrete at $10.00	17000.00
1140 feet wire fence at $ .25	285.00
Total	$25285.00
Ten per cent contingencies on account of foundations	2,528.50
Total	$27,813.50

1653 *Summary.*

Approximate Estimate of the Cost of Duplicating the Knoxville Water Plant as it Existed September 30, 1902.

River Station.....	$98,500.00
Reservoir.....	27,813.50
Filter Plant.....	66,300.00
Stand-pipes.....	25,000.00
Cast iron pipes ($373,296.92 less $25,553.50).....	347,743.42
Wrought iron pipe.....	19,311.57
Valves.....	15,183.00
Stop Cocks.....	382.00
Valve Boxes.....	426.00
Check Valves, &c.....	295.00
Fire hydrants.....	8,750.00
Service Connections.....	39,536.00
Meters and boxes.....	37,535.00
Tools.....	5,000.00
Repaving.....	34,941.90
	$726,717.39
Engineer expenses and contingencies (10 per cent.).....	$72,671.73
	$799,389.12
Add value of Real Estate.....	
Total Approximate value.....	

This estimate includes contractor's profit in building the plant, in other words an approximate cost of what the present work would cost to duplicate under contract.

ARTHUR HIDER.

1654 Q. As I understand then Mr. Hider, this estimate of $799,389.12 includes engineering expenses and contractor's profits?

A. Yes sir, but not real estate.

Q. Does it include an allowance for the six items mentioned by you above beginning with "cost of organization" and ending with "interest on capital invested for operating expense and not provided for in net income?

A. It does not; it is merely an estimate of the cost of reproducing the physical portions of the plant as they existed on September 30th, 1902, leaving out real estate or any interest charge, or going value—it is merely the bare estimate of the cost to reproduce the physical parts of the plant.

Q. Now having reached the conclusion that you have stated as to the cost of reproducing the physical part of the plant, how would you reach the value which we seek in this case as a basis for determining reasonable rates?

A. To the amount of the estimate there should be first added the value of the real estate, of which I am not competent to form any

opinion. Next, the cost of organization and bringing the business into existence, including expenses, of promoting you might say, charter and necessary legal expenses. Next, there should be added a commission or cost of negotiating securities to provide the necessary funds. Next, interest charges on the moneys used in construction not provided for by the securities, if any. Next, then should be added an annual depreciation charge, and lastly the interest on the capital invested for operating the plant until the business as a whole was on a paying basis and had returned this money so advanced from the net income. These items together would
1655 represent the basis of cost or value upon which to formulate rates.

Q. I do not know whether you are prepared to assign to these additional items that you have just mentioned any percentage to be allowed, but if you are prepared, I will ask you what percentages, if that be the right basis you would allow for each of the items, and if that is not the right basis, what would be the proper basis for each of them or any of them that you are prepared to answer about?

A. The first item "the cost of organization" of course that might vary within wide limits. The second item "cost of negotiating securities" would depend upon the condition of the money market and the desirability of the investment. "Interest on money used in construction" would of course be the usual rate of interest. "The value of the physical elements of the plant" I have given as near as I could. "Real estate" as I have stated before, I am not competent to give an opinion. "Interest on capital for operating the plant," or going value, I would put it in this way: To my mind I assume that a plant of this magnitude would take from 18 months to 2 years to construct, and putting the rate of interest at 6%, it would be something like an average rate of 4½% on the whole amount. To build up the business would take 5 or 6 years, that is, to build it up until it was self-supporting and would return advanced money that had been used in operating it, and the amount I fix would be about 19½% or 20%. This is merely an estimate of course.

Q. How would you designate this 19½% or 20%; what name would you give to it?

A. Well I would give it as is customarily called the name of going value, that is the necessary expense to bring the business up to
1656 a paying basis. Then in addition to this should be added an annual depreciation charge to provide for the gradual dying away of the value of the different elements in the plant, for which I think 2% would be a fair valuation; somewhere between 1¾% and 2%.

Cross-examination by Mr. PICKLE:

Q. How far do you live from Knoxville, Mr. Hider?

A. Well I will tell you approximately, by the railroad about 550 miles.

Q. Where do you live?

A. At Greeneville, Mississippi.

Q. You first came to Knoxville just before Mr. Wheeler's deposition was commenced to be given in this case?
A. Yes sir.
Q. That was your first visit to Knoxville?
A. Yes sir.
Q. You had not at that time given any examination to this plant?
A. No sir, not until that week I spoke of.
Q. You were at that time or had before that time been furnished by Mr. Wheeler with a full copy of his estimate?
A. Of his analysis, yer sir.
Q. And the prices *with* which he placed on it?
A. Yes sir.
Q. You expected to testify during that visit did you not?
A. Yes sir, I did.
Q. You say you examined the physical portions of the plant while you were here?
A. I did.
Q. How long were you here?
A. I was here I think six days; from the 7th until the 13th.
Q. Were there any other engineers here at the same time with you to testify in this case on behalf of the complainants?
A. There were two.
Q. Who were they?
A. Mr. T. T. Johnson and Mr. Ludlow—I have forgotten his initials.
1657 Q. You all went over the plant together did you?
A. We visited the plant together, yes sir.
Q. You talked over the matter here together, didn't you?
A. Yes sir.
Q. You had before you Mr. Wheeler's estimate or analysis of the plant at that time?
A. Yes sir.
Q. Did you go into any original calculations of the quantities, &c., entering into the buildings on your own account, or did you take them from the analysis?
A. Our estimate of the value, at least mine, was made from my own opinion as an engineer.
Q. I know—but did you calculate the material?
A. I calculated the material, the weights of the pipe, weights of the standpipe, the cubic contents of the buildings and estimated their value in a general engineering way, depending upon the class of buildings, as given in that detailed estimate which I produced here.
Q. How did you estimate the quantities of brick, from an engineering or contractor's method?
A. For instance the filter plant, the cubic contents were taken and were allowed at 10 cents per cubic foot which is a reasonable estimate for that class of buildings.
Q. Well did you estimate by the thousand brick?
A. Roughly, to check the other estimate.
Q. Well you adopted the engineer's method in calculating the number of brick in the buildings?

A. I didn't get to that, not having the plans. For instance the buildings are of different classes, and an architect when he makes an estimate on a building, he makes an architect's estimate, depending upon the material, how it is build, and it will come very closely to what it actually cost by an estimate of the cubic contents.

1658 That is the way I estimated the value of the filter plant building.

Q. Then you didn't go into the thousands of brick?

A. No sir.

Q. Now what did you estimate fire hydrants at?

A. I will have to refer to this estimate. I think set at $35.00 each.

Q. Do you know how many nozzles the fire hydrants had?

A. Some of them had two and some of them one I believe.

Q. Did you make no distinction between them?

A. No distinction between them, no sir.

Q. As to the size of the pipe?

A. That is all estimated in the length of the pipe.

Q. You made no difference in the size?

A. No sir.

Q. Do you know whether they had frost jackets on them or not?

A. I do not know sir.

Q. What difference does it make as to its having or not having a frost jacket on?

A. It depends altogether upon the depth the main is below the street.

Q. What is the ordinary estimate?

A. Probably $2.00 or $3.00 apiece.

Q. I see you add a contingent item onto reservoirs of $2,528.50. What was that for Mr. Hider.

A. That is on account of the dangers and treacherous condition of the foundation on which it rests. It is on a rock formation and we were reliably informed that they had at one time an accident to the reservoir on account of the bottom sinking and that it had been quite expensive to repair. In fact I saw a photograph of the reservoir after it happened with the damage that had been done. It was on account of the treacherous foundation upon which the structure was built that that was allowed.

1659 Q. Who had that photograph and showed it to you?

A. I saw it in the office of the Knoxville Water Company.

Q. Then you base that wholly upon information that you got from the parties in personal control?

A. Yes, and the present configuration of the ground in the vicinity. It is on a knoll, and you can see the lay of the rock and see where the water after it broke through ran into the valley.

Q. That was the estimated cost of repairing the injury to the reservoir?

A. Not exactly; it was the additional price as a contingent to provide against any defect that might be found in the construction of the reservoir—not to provide for the cost of repairs. I do not

know how much the cost of the repairs were; they might have cost five times that much for all I know.

Q. When did you return to the city of Knoxville, Mr. Hider?

A. I returned here on the 19th. of January.

Q. How long did you remain then?

A. I remained here two days.

Q. You came here to testify?

A. I came to testify but was informed that they were not ready.

Q. When did you return the last time?

A. I arrived here yesterday afternoon.

Q. The rock that would be excavated from the reservoir would be largely used in construction on the ground of the reservoir and other adjacent works, wouldn't it?

A. Well they could utilize it like some of the rock they excavate in trenches, that is for concrete work—that is about all the use they could make of it as broken stone.

Q. By whom were you selected in the valuation of the Memphis plant; whom did you represent?

A. I represented the city of Memphis?

1660 Q. Was the use of the streets given to that company, or were they paid for, do you remember?

A. I cannot state positively, but I never have heard it stated that they paid anything for the franchise, and I think if they had I certainly would have heard it.

Q. The franchise entered into your estimate?

A. It did not.

Q. Do you mean the use of the streets did not?

A. It did not.

Q. You thought it was proper then to exclude the franchise?

A. Yes sir, for this reason: The water company had given an option to the city for a certain amount of money to purchase the plant. Its going value, or good will, as I took it, was not a matter for our consideration. The question that the city wanted us to determine was whether the plant itself was worth that much money, whether the water supply would hold out, or whether it would be cheaper for the city to build a new plant and take water from the Mississippi river in the event of the artesian supply giving out.

Q. What proportion of a plant is the franchise, ordinarily?

A. The franchise in itself I don't consider as of any value, except it be an exclusive franchise preventing anybody else from following the same business. A franchise as I take it in our state is purely a permit to do business.

Q. For a certain length of time?

A. Yes sir.

Q. And the use of the streets during that time you don't consider worth anything?

A. Not in our state, because they can give no exclusive franchise to anybody.

Q. Don't you think it has an annual value? to have the right to use the streets free?

A. Well whatever the permission is worth for the use of the

streets, it might be considered to have a value that way,
1661 unless it is exclusive and if it is an exclusive franchise, why of course it may have some value because that prevents competition.

Q. Now you say the statement submitted to you, estimating the value of this plant by Mr. Wheeler purported to take the prices generally from the books of the company, did you not?

A. That was my understanding, yes sir.

Q. Well as to the prices of material; in estimating the actual cost of the construction of the plant, the best estimate would be the cost taken from the books, wouldn't it?

A. That is the best way.

Q. You would look to the books if you were making a year by year's statement of the cost of the plant?

A. I certainly would.

Q. And the books of the company if properly kept, ought to show that, oughtn't they?

A. I think that might be taken for granted.

Q. The answer that you have made to the question as to the proper basis for reasonable rates, was read from a statement that you had prepared carefully before you came here, was it not?

A. Yes sir.

Q. You say you think about 2% should be added for depreciation; 2% of what?

A. Two per cent. of the cost value.

Q. And you put that into the construction account?

A. I would put that into construction account—into capital account unless it is provided for or set aside yearly and put into a sinking fund or returned to the stockholders or to the investors.

Q. You have in your statement here put it into construction account, havn't you?

A. Yes sir.

Q. Now isn't it true that 2% is a pretty high estimate for that and above the ordinary estimate?

1662 A. I don't think it is General; it is the usual allowance that is made on water plants; as I said nearly 2%, from 1¾% to 2%. Of course it depends upon the character of the buildings and the character of the work originally.

Q. Well hav-n't you known it to be placed as low as 1% or 1½%?

A. Well occasionally I have seen it placed as low as 1½%, but I never knew it placed at 1%.

Q. Hav-n't you known it to be placed at 1½% oftener than at any other figure?

A. No sir I would say from between 1½% and 2%. I don't think that 2% is too high—I am willing to stand on that—I don't think it is any more than a fair depreciation on property of that character, and where I live I would be inclined to put it higher than that on account of climatic conditions that would cause it to deteriorate so much faster than further north.

Q. Those conditions do not exist here at Knoxville do they?

A. Well not to so great an extent as they do further south.

Q. Now you place the life of the plant at 30 years, and then estimate it at 2%?

A. Yes sir.

Q. Suppose you placed the life at 40 years, would you place it at 1½%?

A. The longer the life of the plant, the lower the depreciation charges should be.

Q. If you would place the life of the plant at 40 years wouldn't 1½% be about right?

A. I don't recall just now what 1½% compounded for 40 years would make.

Q. Mr. Hider, in estimating the value of the plant, the fitness of the plant to perform service at a particular date ought to enter largely into the question of its value, oughtn't it?

A. Yes sir.

1663 Q. In other words, a plant that had at this time about lived out its useful life and had to undergo extensive additions and repairs, wouldn't be as valuable as a plant that was up to date at this particular time would it?

A. Certainly not.

Q. A plant that is suited to the uses of a city ought to furnish a water supply that would secure reasonable insurance rates, oughtn't it?

A. Certainly.

Q. And reasonable facilities for the extinguishment of fires?

A. Of course.

Q. What do you mean by this item of "Cost of organization and bringing the business into existence. Do you understand by that the promoters of the concern should be paid something?

A. I think that the party or parties who conceived the idea and worked it up to practical results should be paid, as is usually the case by all private companies, for the time and money that they have expended in bringing the institution into physical being, you might say.

Q. Then this is the something that you think ought to be paid to promoters?

A. Yes sir one of the necessary expenses in organizing the company.

Q. Well now your second item is "Cost of negotiating securities. Suppose the plant to be one that has a capital stock sufficient if paid in as the law requires, to build a plant without the negotiation of securities?

A. Then there would be nothing properly charged under that head, but it would come under another head which would mean this; supposing this plant required $800,000 to build and it took two years to build it; that would be one year at 6%, and the stockholders who put up their money would certainly be entitled to interest on that money during the two years that they are out of the use of their money.

Q. But the time of construction of the plant would prob-
1664 ably be fixed by the contract, wouldn't it?

A. It should be.

Q. And that could be ascertained from the contract and not from an estimate?

A. Of course it would be determined by the contract, but you must remember this, the shorter the time, if a very short time, the greater the cost.

Q. Haven't you in your third item here provided for interest charges on money used in construction, and isn't that the very thing you are substituting now for your second item?

A. That means of course not in addition to the interest if it is bonded. If the plant is built for cash, say be stockholders subscribing for stock, why then the second item would be obliterated, because there would be no cost of negotiating securities.

Q. Then the second item wouldn't stand in case there were no necessity for negotiating securities?

A. Then there would be no necessity for negotiating securities.

Q. Now your sixth item is interest on capital invested for operating expenses not provided for by net income? That item should enter into the calculation only in event that the operating expenses were not provided for out of the income, as I understand you?

A. Certainly.

Q. Now in fixing, Mr. Hider, the proper basis for calculating reasonable rates for particular years, we will say for example the year 1900, would you estimate the whole of the affairs of the company up to that time, its income and its operating expenses and construction and all, and strike a balance and charge the balance, if there was losses add them to the amount to be charged upon water rates for that year?

A. Well whether all the losses should be charged to one year would be questionable. If the plant had been judiciously
1665 and economically administered and the rates heretofore had been such as not to return a fair interest on the investment, why that should be considered in fixing any future rates.

Q. Well suppose the plant had been so successful prior to that time as to actually pay operating and all other expenses and to repay to the original stockholders the whole of their investments, what would you do then?

A. The rates if fair and reasonable to citizens at large should be reduced. I stated that practically in my statement before.

Q. Suppose that some years show in operating, losses, and that other years show gains or net profits. What would you do with the net profits in a case of that sort; would you credit them?

A. If they are credited to capital account, why then the rates should be reduced. If there was a surplus and it was used in future extensions and betterments, why it should be added to the capital account, because the property would be that much more valuable. In one case it would be less valuable because there had been no improvements and in fixing the rates, while the property itself might have remained at the same value physically there are two things

to be considered, that the company should have a fair, just and reasonable return and that the consumer should get water at fair, just and reasonable rates, that is just as little above cost as might be after paying the water company a reasonable profit on their investment.

Q. Don't you think there are cases where the rates would be unreasonable were the consumers required to pay a reasonable return on the investment of the company.

A. There might be such.

Q. Suppose the water company had a free hand to fix its
1666 own rates and had never sustained a loss. Would you add the loss in and burden future rates with that loss?

A. In answer to that question I would say this, that the water company being a *quasi* public institution, when it enters into a contract with the city to furnish water at rates that are supposed to be sufficient to meet the just charges, there is another party to the contract, that is, the general public. To be fair between those parties, if the company has, through mistaken ability fixed the rates too low, or below cost, they would not be fair, just and reasonable rates, and the citizens would be getting something for nothing, and no good citizen wants to do that.

Q. Well then wouldn't it be unjust to citizens of the next generation or of future years to have imposed upon them an additional burden on account of the water company's mistake for not exacting this of citizens in former years?

A. Well everything is progressing. No man can foresee the future. In the case of a water company, an electric light company or street railroad company, no one can see far enough ahead to know how large a city will become, which way it will extend, what the population will be in ten years, what demand there will be for water, and of necessity they build a plant at the time for the needs ahead as they can see them for five years. At the end of five years, conditions change, and it becomes absolutely necessary to take up the pipe in some localities and relay them in other localities, to take out or instal- new machinery and to replace some of the plant, it being outgrown, all this, providing it was done in good faith and good judgment, and which cost the company money to build, I consider is a fair investment charge to be considered in fixing future rates.

Q. Then you think that the people and not the company should bear the burden of the company's mistake?

1667 A. Not exactly a mistake. There are two parties to the contract. The company is entitled for the services it performs a just remuneration; the citizens are entitled to water at the lowest possible rates consistent with good management, after allowing a reasonable profit to the corporation that furnishes them with water, and we will suppose that they give good service and all that—that is in a matter of fairness. In other words, as a matter of business it is not a contract, as I take it, where one party is trying to get ahead of another in a business trade.

Q. Well now the people of the year 1900 are not the same people

who are consuming water in the year 1890. Now suppose that a company by failing to fix its rate, as it had a right to do in 1890 had sustained a loss. Now do you think it equitable and just that the people in the year 1900 should be burdened with that loss in their water rates when the company itself had wilfully failed to fix the rates as high as they might have done to indemnify themselves?

A. Well in answer to that I would say that while it might not be fair on the face of it to the individual who lived in the year 1900 to pay higher rates than the man who lived in the year 1890, because the water company didn't require those parties to pay high enough rates, still the citizens at large are only, in the end doing and getting rates that are fair, just and reasonable to the water company and necessarily to the community at large they have had more than they are entitled to and the citizens at large in the year 1900 are simply equalizing the matter.

Q. But one citizen doesn't pay for another citizen's water, does he?

A. I presume not.

1668 Q. The contracts are with individual citizens at the time for furnishing water are they?

A. I suppose so.

Q. Now if "A" paid too little for his water in the year 1890, that isn't any reason why "B" should pay too much for it in 1900?

A. Well the question is whether "B" is paying too much for it or not; whether he is paying more than water can be furnished for with the additional expense of larger machinery they have got, and with better facilities the rates may be higher now and the company might have got along with less rates before.

Q. But you lose sight of the essential element of this proposition that you are adding the loss sustained in 1890 to the investment of this concern and make it a burden upon the people of 1900; would it be right then?

A. Well, under my interpretation of it, it should be fair, just and reasonable; as I stated before, there are two parties to the contract, and it cannot be fair, just and reasonable to one unless it is also to the other.

Q. Well now let us suppose that there had an excess of money been paid on interest or in dividends during some portion of that period; what would you do with that?

A. I certainly would do just the contrary to what I have stated before; I would reduce capital account, or the expense and reduce the rates.

Q. You speak, Mr. Hider, of paying operating expenses, depreciation and interest on the indebtedness of the concern, and then a profit. Now let us suppose that the concern don't owe any debts, that they built and operate it on their capital stock, and its ordinary income; there wouldn't be any interest to pay on their

1669 indebtedness then would there?

A. None.

Q. What are the elements then that enter into a due return to the operators of a water company that owes no debts, that has con-

structed its plant out of its own subscriptions; what then would enter into a due return?

A. In regard to fixing rates, do you mean?

Q. Yes, sir.

A. There would be operating expenses, maintenance, depreciation charge and there should be a sinking fund to provide money enough to replace the plant at the end of its useful life, and if it was paid for and owned by stockholders there should be a fair dividend on their investment.

Q. Well what would you regard as a fair dividend?

A. Well that is different, in different parts of the country. Where I live they wouldn't think anything of an investment that didn't pay as high as 10% or 12% and I know of some banks that receives 20% or 30%, but in a community of this kind I should say 6% would be about the average.

Q. Now you say there should be a sinking fund as well as a depreciation fund. The depreciation fund is supposed to be sufficient to keep the plant just as good throughout its life as it was at the inception of its existence, is it not?

A. The depreciation is purely a matter of deterioration. Suppose you take the life of a plant at 30 years and you put 2% as depreciation, at the end of the 30 years we will have money sufficient to replace the plant.

Q. If it is not used in replacing the plant during the 30 years?

A. Yes, sir, but if it is used in repairs from year to year, at the end of the 30 years the plant is not like a new plant. If this
1670 money is put as a sinking fund, you see and the maintenance charges are sufficient to keep up the ordinary repairs and in good condition, betterments, extensions and enlargements, this 2% if invested of course would replace a plant under those conditions.

Q. Isn't that what the 2% is for, that is to keep the plant up to its original condition during the 30 years, and isn't that what is contemplated it will be used for?

A. Two per cent. taken annually, there are parts of the plant that it would take a great — more than two per cent. to replace.

Q. Well now, Mr. Hilder, isn't it also true that there are parts of the plant that will last twice or two and one-half times 30 years?

A. Well parts of a plant possibly may last as I have stated, for instance buildings I have assumed from 50 to 75 years, machinery 15 to 20 years; street mains 40 to 50 years; reservoirs 30 years; hydrants and small pipe 10 to 15 years.

Q. Now the average life you put at about 30 years don't you?

A. About that.

Q. And other engineers put it as high as 40 years?

A. Yes, sir, I guess so.

Q. Now 2% set a part annually at a proper rate of interest will amount at the end of 30 years to the cost of a plant?

A. Yes, sir.

Q. And isn't that 2% depreciation fund set apart for the purpose of restoring the plant from year to year and keeping it up to its original standard?

A. It is a decrease at the rate of 2%.

Q. Well that 2% restores the decrease in value from year to year; isn't that what it is for?

A. That is the intention of it.

Q. Now do I understand you to say that in addition to
1671 this depreciation fund of 2% there should be set aside a sinking fund that would amount to the value of the plant at the end of 30 years or the average life of the plant, do I so understand you?

A. In answer to that I will just repeat what I have written: In fixing the value of the plant in order to arrive at a fair rate basis, a discrimination should be made as to whether the rates heretofore have been sufficient in addition to paying for economical running expenses and depreciation to provide for a sinking fund. If the rates have been so high that part of the capital has been returned, the rates should be reduced accordingly to be fair, just and reasonable. If on the other hand the net income has not been sufficient after paying interest on capital and maintenance charges to provide for a sinking fund, a reduction of the existing rates would mean a reduction of interest on the capital invested below, a reasonable rate to the company and would not be fair, just and reasonable.

Q. Well now does that language contemplate the setting aside of a depreciation fund of 2% for the purpose of restoring the plant from year to year during its average life and also in addition a sinking fund to accumulate an amount equal to the value of the plant at the expiration of its life?

A. No sir, one or the other.

Q. One or the other?

A. Yes sir.

Q. Mr. Hider do you think there should be any difference in calculating the basis for reasonable rates between a plant the owners of which put up the money directly out of their own pockets and a plant that is built by borrowing money upon a credit?

A. Not if you allow the same profit or interest on the
1672 different investments.

Q. Well the same interest and no more should be paid where they borrow the capital as where they advance it themselves shouldn't it?

A. Well I will put it in this light; supposing we have a plant that is organized on a cash basis, the stockholders have the management of the concern and as their return they get a certain amount of interest; they pay the salaries of their officers and employés and they manage the busines as a private corporation ought to be managed. On the other hand we have a set of stockholders who carry on their business, which is a commercial business, on borrowed capital. All the return that they get, if they get the same return as the other, would be the privilege of supervising and managing the business and of taking all the responsibility and risk for the citizens for the honor of being stockholders.

Q. Well stockholders have a right to dividends upon their stock, hav'n't they according to your judgment?

A. They have a right to a dividend I think.

Q. And the managers of a concern are paid such salaries as the corporation fixes?

A. They are.

Q. Now do you think there are any substantial differences for the fixing of rates that are just to the public as between a corporation that furnishes its own money to build a plant, and a corporation that borrows the money to build its plant?

A. Well that depends altogether, or very much so on who the stockholders are, what salaries they pay, how the business is managed and so on; but in the equity of the case it could hardly be expected that any set of stockholders would go to work and or-

1673 ganize a company to be water purveyors or engage in any other commercial line of business, I say, it is hardly to be expected that a set of men should bind themselves together solely upon philanthropic motives and as a business proposition, the stockholders or owners of the water company for their time and trouble, and the money that has been invested, if it has not been returned to them, should be allowed a fair remuneration, a fair profit on their investment.

Q. But you don't understand my question between a company that advances its own money out of its own pocket, and a company that goes and borrows the money to build its plant; should there be any difference between the rates of the two companies?

A. Well I don't know that there should be any material difference in the rates. As I stated before, some profit in addition to the bare rate of interest should be allowed to stockholders. In one case they get it because it is their own money and in the other case they would get nothing.

Q. Well on other investments the loan of money realized in the state of Tennessee does not exceed, six per cent., does it.

A. Six per cent. I understand.

Q. And the owner has to pay the taxes out of that doesn't he?

A. Yes sir.

Q. And that is true of funds held by guardians, administrators and trustees, isn't it?

A. I believe so.

Q. Now suppose that a water company instead of paying up the stock which was abundantly sufficient to erect the plant, the law requiring that they pay it into the treasury simply resort to borrowing capital and bonding the plant in order to raise money to build. Should there be any allowance for the additional expense

1674 of negotiating securities for a company acting in that way?

A. Well I think so, unless the company gets back their necessary expenses for bringing the water company into existence, unless they are paid something for the money invested in the stock, and I presume their stock is paid, for but I don't know.

Q. I am talking about their negotiating securities when they have a sufficient amount to erect the plant. Ought they to be paid for negotiating these securities?

A. If the company has not the money at hand to carry on their

work, to build their plant and to operate it and it is necessary for them to borrow money, why it certainly would be proper to charge a reasonable rate for discounting their securities.

Q. But suppose the capital stock subscribed is required to be paid into the treasury and is ample to build the plant without borrowing anything?

A. Then if there were no securities negotiated, there ought to be no charge.

Q. In other words a company that proceeds on business principles and in conformity to the law should not be at any disadvantage as regards a company that don't conform to the law, should it?

A. I think not.

Q. Mr. Hider, the city of Memphis has over 100,000 inhabitants, hasn't it?

A. Yes sir, they claim 115,000 now.

And further deponent saith not.

——— ———.

Sworn to before me this — day of Feb. 1903.

——— ———.

The further taking of depositions was adjourned until February 3rd. 1903, at 9 o'clock, A. M.

1675 TUESDAY, *February 3rd,* 1903—2'o'clock p. m.

The further taking of depositions was resumed.

Next witness, T. T. JOHNSTON, called on behalf of the plaintiff, having been first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Where do you live Mr. Johnson?

A. Evanston, Cook County, Illinois.

Q. What is your profession?

A. A Civil Engineer.

Q. How long have you been a civil engineer?

A. About twenty-five years.

Q. Where did you get your training for your profession?

A. At the Rensslaer Polytechnic Institute, Troy, New York, and graduated in the class of 1877.

Q. Have you practiced your profession continuously since that time?

A. Yes sir.

Q. Have you been engaged to any extent in hydraulic engineering?

A. Almost continuously since beginning my practice as an engineer.

Q. Do you regard yourself qualified to give testimony as to matters of construction, operation and valuation of water works plants?

A. I do.

Q. In order that the Court may know what experience you have

had in matters of the kind indicated in the last question, I will ask you to state what you have done in that line?

A. In water works practice particularly, my earliest responsible work was in the matter of the purchase of the water supply
1676 of Joliet, Illinois by the city from a private water company in the year 1888. I immediately afterwards became engineer for the water supply at Memphis, Tennessee, and in that year designed the water supply which now serves that city, and have been connected quite continuously with the plant there ever since and at the present time I have engineering charge of the water supply at Memphis. In 1890 I was called in by the city of Savannah, Georgia, and in that year designed the water works which now supplies that city, and supervised the construction of it up until 1893 when we completed that work. At various times I have been employed in matters pertaining to water supplies in litigation and construction, at Rockford, Illinois, Racine, Wisconsin, Greenville, Mississippi and Waco, Texas that I remember specifically now. In matters relating to hydraulic enginering and involving kindred work to water supply work, perhaps the most important work I have been connected with was the Chicago Drainage Canal. I was connected with that project quite continuously from 1886 until the Summer of 1900 and during that period designed the hydraulic elements of the channel and quite a number of the structural elements. I invented the Bear Trap Dam, designed the Regulating Works Improvements of the Chicago River, and improvements through Joliet. In 1898 I became engineer for the Snoqualmie Falls Power Company, a water driven electric plant that cost some $700,000 or $800,000; I subsequently constructed a water driven electric plant in the Snake river in Idaho at Swan Falls, and am now about completing a water driven electric power plant of the Economy Light and Power Company at Joliet, Illinois, a concern capitalized at $1,600,000.
1677 I am at present connected with the American Falls Power Company of Pocatello, Idaho, the development of a water power plant in Marseilles, Illinois, the development of a water power in the Kankakee River at Wilmington and for several years I have been connected with the water power plant at Kankakee, on the Kankakee River; am at present employed by the state of Illinois in the matter of a pumping station for feeding the Summit Level on the Illinois and Michigan canal, power for doing which is being transmitted 34 miles electrically. I believe I have already stated that I at present had charge of the water supply at Memphis, Tennessee. I have had various consultations in connection with water powers during the last few years. Prior to 1886, I was employed in the service of the United States on Western rivers, in particular reference to a study of the physical characteristics of the Western rivers, and it was from that service that I went to the service of the Chicago Drainage Canal, and subsequent to that time have had the experience which I have just outlined. In connection with the Memphis water works I will say that that was with reference to the valuation of the plant there between the water works company and the city of Memphis in 1898 and the Summer of 1902, in which matter I represented the interests of the water company.

Q. Do I understand that you have been continuously connected with the Memphis Water Works for the last 10 years?

A. Quite continuously for the last 15 years, or nearly 15 years now. There have been periods when I wasn't in the service when no extensions were made. My present employment with them dates from a year ago last November.

1678 Q. Was Mr. Arthur Hider connected with this water works appraisement at Memphis in 1902 that you refer to?

A. Yes sir, he was in the interest of the City.

Q. So you and he were on opposing sides, or rather opposite sides in that case?

A. Yes sir we were on opposite sides.

Q. Have you had opportunity, during your connection with the Memphis Water supply to become familiar with the prices of material entering into the construction of water works and prices of labor for erecting works of that kind in the State of Tennessee?

A. I have.

Q. Are you acquainted with the reling rates of interest for money in Tennessee?

A. In relation to water works securities I am, at least in the other end of the State.

Q. In the water works appraisement at Memphis in 1902 was there any work done by you or Mr. Hider or anybody else in the nature of analyzing and classifying and distributing the property of the Water Company in order to reach a valuation?

A. There was.

Q. How long have you been acquainted with Mr. William Wheeler?

A. I met Mr. Wheeler for the first time early in November last.

Q. Was that before or after he began to testify in this case?

A. As I understand, that was before he commenced to testify*ing* in this case.

Q. Do you know anything about his testimony?

A. No sir.

Q. Previous to your meeting him, had he furnished you with a copy of an analysis that he had made of the property of the Knoxville Water Company?

1679 A. Yes sir.

Q. Without going into the details of that analysis, I will ask you if anything in the nature of that analysis—anything similar to it was prepared in the Memphis Water Works appraisement?

A. There was nothing in such detail. There was something similar. The principles involved were discussed and talked over.

Q. Did the analysis or statement prepared at Memphis or analyses, if there were more than one required, go into an investigation as to the prices of material and labor?

A. They did.

Q. Were such inquiries made by you personally?

A. Yes sir.

Q. Did you understand that the prices of material and labor adopted in the analysis of the property of the Knoxville Water Com-

pany, furnished you by Mr. William Wheeler, were based upon information taken from the books of the Knoxville Water Company?

A. I did not so understand.

Q. How did you understand that the estimates in that respect were made up?

A. The estimates were made up on the basis of the fair valuation of what the work under consideration should have cost at the time it was done, in view of current prices at the time existing.

Q. Assuming that that was the method adopted in said analysis, do you consider it a fair and proper one for determining the value of the plant of the Knoxville Water Company?

A. I do.

Q. Assuming that there are no adequate accounts in this
1680 Company's books of construction cost for a considerable part of its history, by what method would you proceed to determine the value of the plant at any fixed time?

A. The method pursued by Mr. Wheeler in his analysis.

Q. If it were necessary to resort to the method you have indicated for finding construction cost for a part of the life of the plant, would it be proper to apply the same method to the whole life of the plant, including the part for which there might be books of account, and if so, why?

A. It would be proper, because in my opinion it is the only way to arrive at a fair valuation of the plant.

Q. Will you explain why you entertain that opinion?

A. It seems to me that it is the method of procedure that should be pursued in discovering what is a fair value of any construction, under general ruling conditions as to prices of labor, prices of material and various conditions that concern the making of a construction, and that that is the only way in which you can get at the fair valuation of a piece of property. It occurs to me it is fundamental; because a piece of property may be made cheaply under certain conditions, or expensive under other conditions.

Q. If there were no books of account of this company, could you still ascertain the value of the plant?

A. Yes sir.

Q. By what method?

A. By the processes adopted by Mr. Wheeler in his analysis.

Q. In ascertaining the value of a Water plant owned by a private person or corporation, should the fact be considered that during the time of construction of the physical plant and before it is put
1681 in operation, the capital invested is unproductive, and if it should be considered, what effect should be given it?

A. The interest on the investment pending its becoming a revenue payer should be charged in as part of the cost of the works?

Q. Are you able to say what amount it would be fair to allow in the way of a percentage or otherwise on the capital for the time it is unproductive?

A. In the matter of the construction of a plant like the Knoxville Water Works, about 3 per cent. perhaps, if the work were expeditiously conducted.

Q. Treating that as applying to original construction, could you

extend the rule to extensions and construction for other purposes subsequent to original construction?

A. The principle is of general application.

Q. Is it proper to allow a Water Company, in cases like this one, for engineering services and expenses, and if so, what amount would you allow?

A. It is valued on by engineers, at 10 per cent.

Q. Do you think that would be a fair allowance in this case?

A. Yes sir.

Q. Suppose that the works of this company were constructed by the company itself, the work being done under the supervision of its own officers, would an allowance for engineering services, &c. be proper in such a case?

A. Yes sir, for such services performed, it is entitled to compensation.

Q. Should the Knoxville Water Company in this case be allowed anything for contractor's services, risks and profits, and should the same be allowed where the work was done by the company under the supervision of its own officers?

1682 A. It should be.

Q. Assume that the total construction cost of the physical plant of the Knoxville Water Company was $711,379.51 including cost of engineering, contractor's services, expenses, risks and profits and interest on capital during construction; would that sum so made up represent the value of the plant, or are there other things to be considered?

A. There are other things to be considered.

Q. Now I will ask you to state what those other things are?

A. The work of organization, the expenses that might attend financing or getting the money to do the work and what is called the going value. In addition to this there would be, or might be in certain cases, in fact should be considered in all cases, questions arising from the depreciation, and maintenance of the plant.

Q. I will ask you to state what you mean by expense of organization?

A. The expenses of organization might be various: Legal expenses are involved to a greater or less extent, getting charters or franchises, and various preliminary expenses that are necessary before you can bring up from a physical construction into a physical beginning; and in connection with that, sometimes in organization, there might be as there was in the Memphis Water Works in 1888 some physical question involved, where there previously existed a water supply, which in the light of the possible new water supply it became expedient to abandon—that was the Wolf River water supply which wasn't very healthful, and when they discovered the artesian

1683 water, they set about to secure it, and that is one case in which the physical question was involved in the physical organization.

Of course that is exceptional, and I simply mention it in order to show that a great many expenses might be involved in getting the concern started.

Q. Does usage in such cases as this, or does the practice of your profession assign any particular percentage as proper to be allowed for organization expenses, or can you indicate what that is?

A. Well, as a matter of judgment, that would vary in different cases; applying it to a case similar to the Knoxville case here, under existing conditions, I think perhaps 4% or 5% wouldn't be wrong.

Q. Four or five per cent, on what?

A. On its present value.

COMMISSIONER: On its value today, although organized twenty years ago?

A. Yes sir.

Q. What do you include in the item of expenses of financing the Company?

A. Well there are perhaps several ways of expressing that; it is the commission which has to be paid to get each individual dollar that is put in the work—a discount on your bonds.

Q. What is the ordinary method of financing Water Companies?

A. By borrowing money through various agencies which shall be applied to the construction of the plant, which may be represented by bonds or by stocks, principally by bonds.

Q. You say the money is secured principally by the sale of bonds?

A. Yes sir.

Q. Of what grade in the financial market are Water Works
1684 bonds usually?

A. As to interest rate you mean?

Q. Their interest rate and general desirability?

A. That depends on different localities. In a good growing City, if the plant is in good shape, they ought to be very desirable securities at about 5 per cent.

Q. Do you refer to municipal water works or water works owned by private persons or corporations?

A. To water works owned by private persons.

Q. Do you refer to works that are established or that are to be established?

A. To works that are established.

Q. If the works are to be established, does the question of their success in the future enter at all into the matter of the interest that their securities will bear?

A. Very largely.

Q. Assuming a case of a water plant owned by a private corporation in a city of from 30,000 to 50,000 inhabitants, the relations between the City and the Water Company being somewhat hostile, would that have any effect upon the amount of interest their securities would bear?

A. Yes sir, upon the interest, and what they would be sold for too.

Q. Would it have a tendency to increase or decrease the rate of discount?

A. It would increase the rate of discount.

Q. You have referred to what you call the "going value" I will

ask you to explain a little further to the court what you mean by "going value"

A. The water works here in Knoxville, for instance in their present condition, have an established business, revenue pay-
1685 ing, pipes in the houses, customers, and perhaps contracts for selling water in various ways; that is one condition. Suppose that was all wiped out, no revenue basis, no consumers, no contracts made, and a plant was to be built just like the present one; now between the time of completing that plant and some future time, it would arrive at the some condition that the plant is now. Now the going value is concerned in the difference between the condition in which it is now and what would happen during this time it would take for it to arrive to the condition it is in now, if it had to be rebuilt in building up the business.

COMMISSIONER: You mean the time it would take to build up the business?

A. Yes sir.

Q. Can you assign a definite value to what you call the going concern, or going value that can be expressed in percentages on the total value of the plant?

A. I can give my judgment, yes.

Q. What is it?

A. It would be about 15 per cent. in the Knoxville case, is my judgment.

Q. I omitted to ask you what would be a fair allowance for expenses of financing the company; I will ask you now to state what in your judgment would be a fair allowance?

A. I think a 90 per cent basis would be as good as could be expected in the matter of financing and building up a water supply plant such as that here in Knoxville.

Q. That is, you would expect a $100.00 bond to sell for $90.00?

A. Yes sir.

Q. What is the estimated rate of depreciation of a water plant?

1686 A. Upon that, I can give my judgment as to a plant like that at Knoxville; taking it in its entirety, of course some parts will depreciate faster than other parts, I would say 2 per cent.

Q. Is that a generally accepted opinion of that kind among water works experts?

A. I believe it is. I base my estimate on some special studies of the matter, outside of my general opinion.

Q. Suppose that the Water Company has not, up to this date, earned more than enough to pay fixed charges of interest and operation, and that such impairment by depreciation as has accrued in the property, has been met by the investment of new capital, and the company has not been able to set aside at any time a fund to provide for current impairment or future renewal of the plant now in use, against what would you charge the new capital so invested?

A. It should go into the capital account of the company as a part of the investment.

Q. In ascertaining value in this case, would you include the new capital invested in renewals, &c.?

A. Yes sir.

Q. Would it be proper in addition to charging the principal of such new investments to captial account to allow interest on the several sums so invested from time to time when they were invested?

A. It would.

Q. Assuming that the financial condition above assumed, to wit; the necessity of providing for renewals, &c. by the investment of new capital to continue thereafter, should such future investments of this nature be treated like those already made?

A. They should.

Q. Suppose the financial condition assumed in the last two questions to continue until the company ceases business, would
1687 the company then have anything to represent impairment that had accrued on the plant from the beginning down to that time?

A. It would not.

Q. What do you mean Mr. Johnson by the word "maintenance" as applied to the operation of a water company?

A. Well repairing leaks, broken pipe here and there that might have to be fixed up occasionally. There are various repairs to be made to keep a plant up in a certain condition, and painting the smoke stack and things of that kind; then there may be maintenance charges which go to making good natural deterioration of the plant, or depreciation.

Q. Now do you make a distinction between maintenance and depreciation?

A. It would depend on the connection of which you might happen to be speaking. I am not confusing operating expense with operating charges. There is a class of expense growing out of coal bills, and all that sort of things, classed as operating expenses.

Q. Have you prepared a statement of the cost of replacing this plant?

A. Yes sir.

Q. As of what date?

A. September 30th 1902.

Q. I will ask you to give such statement to the stenographer?

A. The statement is as follows:—

1688 *Approximate Estimate.*

Knoxville Water Works Plant, September 30, 1902.

Real Estate.

River Station.

a. Engine House	$29,000.	
b. Boiler House	4,000.	
c. Coal Chute	1,500.	
d. Pumping Engines	37,500.	
e. Boilers and steam pipe for pumps	11,800.	
f. Stairs, Railing	2,000.	
g. Intake Tower, etc.	12,000.	
	$97,800	$97,800.00

Reservoir.

16,000 cu. yds. ex. & such, at 50c	$8,000.	
1,700 yds. concrete at $10.00	17,000.	
820 ft. wire fence " 25c	205.	
	$25,205.	
10% for contingent item on account of foundation	2,520.	
	$27,725.	27,725.00

Pipe Distribution.

Cast iron pipe	$350,946.92	
Wrought iron pipe	19,311.57	
Valves	12,642.50	
Hydrants	8,400.00	
Replacing pavement, 1st. class	9,883.80	
" " 2nd. "	46,350.00	
	$447,534.79	$447,534.79

Service Connections, etc.

Service connections	$39,536.00	
Meters	35,206.50	
Tools	4,500.00	
	$79,242.50	$79,242.50

Filter Plant.

Buildings	$18,271.10	
Engines	4,348.96	
Boilers	2,598.00	
Filters	36,091.56	
Fencing & Grading	1,100.00	
	$62,409.62	$62,409.62
Standpipes & Foundations		13,000.00
L.-B. Standpipe		7,500.00
		$735,211.91
Engineering expenses and contingencies, 10%		73,521.19
Present value		$808,733.10

Add value of real estate, and stock on hand.

1689 *Detail Sheet.*

Feet of cast iron Water Mains laid and existing Sep-. 30, 1902.

20-inch	2,723.3 feet	x 4.00	$10,893.20
18 "	714.9 "	x 3.45	2,466.40
16 "	9,031.2 "	x 2.90	26,190.48
14 "	7,607.8 "	x 2.40	18,258.72
12 "	41,929.3 "	x 1.92	80,504.25
10 "	27,373.9 "	x 1.49	40,787.11
8 "	43,748.1 "	x 1.15	50,310.31
6 "	119,676.7 "	x .86	102,921.96
4 "	45,389.1 "	x .59	26,779.57
3 "	27,278.7 "	x .52	14,184.92
			$373,296.92
Less amount to correct to current price of cast pipe (viz. 32.00 per ton) at 3.00 per ton			22,350.00
			$350,946.92

Feet of Wrought Iron Water Mains laid and existing March 31, 1901.

3½ inch,	250.8 feet	.50	$125.40
3 "	489.7 "	.40	195.88
2½ "	416.2 "	.35	145.67
2 "	31,034.5 "	.30	9,310.35
1½ "	5,618.3 "	.28	1,573.12
1¼ "	5,425.0 "	.27	1,464.75
1 "	17,787.2 "	.25	4,446.80
¾ "	7,937.0 "	.22	1,746.14
½ "	1,517.3 "	.20	303.46
			$19,311.57

Number of Valves set and existing March 31, 1901.

20-inch	9 valves	125.00		$1,125.00
18 "	1 "	100.00		100.00
16 "	16 "	75.00		1,200.00
14 "	13 "	60.00		780.00
12 "	37 "	40.00		1,480.00
10 "	31 "	33.00		1,023.00
8 "	69 "	22.00		1,518.00
6 "	212 "	16.00		3,392.00
4 "	95 "	10.00		950.00
3 "	100 "	7.00		700.00
2½ "	1 "	5.00		5.00
2 "	58 "	3.50		203.00
1½ "	11 stop-cocks	3.00		33.00
1¼ "	15 " "	2.50		37.50
	Forward			$12,546.50
1690				
	Forward			$12,546.50
1 inch	34 stop cocks		$2.00	68.00
¾ "	20 " "		$1.25	25.00
½ "	3 " "		$1.00	3.00
				$12,642.50

Hydrants set and existing Sep. 30, 1902.

91	1 nozzle hydrant		30.	$2,730.00
138	2 " "		35.	4,830.00
21	3 " "		40.	840.00
				$8,400.00

Service Connections.

4942 at $8.00	39,536.00

Meters.

Size.	No.	Value.	
½"	1286	$10.50	$13,503.00
¾"	52	15.75	819.00
1 "	21	21.00	441.00
1½"	19	41.50	788.50
2 "	19	62.00	1,178.00
3 "	1	150.00	150.00
4 "	6	275.00	1,650.00
6 "	3	400.00	1,200.00
	1407	meters, setting and boxes at $11.00...	15,477.00
			$35.206.50
Tools			4,500.00

16,473 lin. ft. paved streets 1st class at 60 cents..... $9,883.80
309,000 lin. ft. 2nd class at 15 cents..... $46,350.00

$56,233.80

Weight of Pipe (Service Mains).

Size.	Wt. per ft.	Length ft.	Total weight.
20".....	175 lbs.	2,723	476,525
18".....	150 "	715	107,250
16".....	125 "	9,031	1,128,875
14".....	105 "	7,608	798,840
12".....	75 "	41,929	3,144,697
10".....	60 "	27,374	1,642,434
8".....	44 "	43,748	1,924,331
6".....	33 "	119,677	3,949,331
4".....	22 "	45,389	998,560
3".....	16 "	27,278	436,479
Pounds.....			14,607,323
Tons.....			7,304
2% for over-weights.....			146
Total weight of pipe.....			7,450 tons

1691 Q. The result of your calculation, as I understand it from this statement then, is of date September 30th 1902, $808,-733.10?

A. Yes sir.

Q. Does that include real estate and stock on hand?

A. It does not.

Cross-examination by Mr. PICKLE:

Q. Mr. Johnston, when did you first visit Knoxville?

A. Early in November 1902.

Q. Before making that visit, you had been furnished by Mr. William Wheeler, President of the Knoxville Water Company, with a detailed estimate of what purported to be the cost of this plant, had you not?

A. Yes sir.

Q. You met Mr. Hider and Mr. Ludlow here on that occasion and talked the matter over, did you not?

A. Yes sir.

Q. In the estimate that you have shown here you did not go into the actual calculation of the quantities of brick, lumber, &c., that entered into the construction of this plant, did you?

A. To quite a close degree, yes sir.

Q. What buildings, did you actually calculate?

A. I calculated the intake to the water works, the foundations of the water works buildings, the walls of the building of the engine

room and the boiler house, and looked over the piping, the boilers, their settings and furnaces and the coal chute.

Q. Well did you make an actual calculation of the number of brick entering into these buildings for yourself?

A. A close calculation.

1692 Q. Well I mean did you actually set down the dimensions and make a calculation for yourself of the number of brick?

A. In the main, yes sir. I would not say at this time that I did it in every particular part of the structure or not.

Q. Didn't you in the main accept the quantities stated in the paper furnished you by Mr. Wheeler?

A. Well I would not say "in the main." That would be to too large an extent possibly.

Q. In what respect then did you change those estimates?

A. That estimate was without reference to Mr. Wheeler's estimate at all.

Q. As to quantities?

A. In a large measure; I cannot say now how far.

Q. Your estimate is not a detailed one, and I would like for you to point out wherein the matter of quantities your estimate differs from that of Mr. Wheeler's that he furnished you?

A. I hav-n't Mr. Wheeler's estimate here, so I cannot give it.

Q. Did you take any measurements of buildings at all?

A. Yes sir.

Q. Of what?

A. The filter plant, I stepped off in part, and my recollection is now that I went and got a tape and measured it; I made a tolerably close estimate of dimensions.

Q. You did it mostly by stepping it off?

A. Well sometimes, and by estimating without stepping it off.

Q. Did you measure heights?

A. Not with an instrument that I remember now.

1693 Q. You came here in November to give your testimony, didn't you?

A. Yes sir.

Q. You expeeted to be examined, and only remained a day or two, didn't you?

A. No sir, for I know enough of a case of this kind to know that a day or two never satisfies the requirements.

Q. But you were prepared to give your testimony before you came here, wasn't you?

A. I was prepared to give testimony in regard to some things.

Q. You hadn't been requested to make up this statement at that time, had you?

A. No sir.

Q. But after that time you were requested to make up this statement?

A. Yes sir.

Q. Now this statement is intended to show the cost of the plant, isn't it?

A. It shows what the cost would be to duplicate it.

Q. Mr. Wheeler's estimate was an estimate made from year to year, wasn't it?

A. Cost of construction.

Q. Now in order to get at the cost of construction, you want to get at the cost of material as well as labor, don't you?

A. Yes sir.

Q. Now do you know any better method at getting at the cost of material than to go to the books of the purchaser and find exactly what was paid for it at the particular time?

A. I do.

Q. You think you know a better method?

A. Yes sir.

Q. You think you can come nearer the cost of material that enters into the plant, than at the price actually paid for it?

A. Nearer a fair cost.

1694 Q. Isn't an actual cost a fair cost?

A. Not always.

Q. Well it is an actual cost of what it took to put it there, isn't it?.

A. Yes sir that is true.

Q. Were you tendered the books of this company to show what the cost of materials were?

A. No sir.

Q. And the statement that was furnished you, didn't purport to be a statement of cost from the books of the company?

A. It did not.

Q. Mr. Hider saw the same statement that you did, didn't he?

A. I believe so.

Q. You were not expecting when you came here in November to give testimony to this matter at all were you; I mean as to this statement of September 30th 1902?

A. No sir I was not.

Q. How far is it from Knoxville to Memphis?

A. I judge it is about 350 miles.

Q. That is the way the railroad runs?

A. It is pretty close to 400 miles that way, if I remember correctly.

Q. Memphis is a very different sized city from Knoxville isn't it?

A. Yes sir.

Q. How much larger?

A. At the present time, I should judge it is more than twice as large.

Q. Isn't it more than three times as large?

A. I am not prepared to say about that. The 1900 census of Memphis gave it 102,000 people; the population is quite a little more now.

Q. You say that you and Mr. Hider were on opposite sides at Memphis in that appraisement; in what capacity was Mr.

1695 Hider acting?

A. He was employed by the City of Memphis to assist in placing a valuation on the water works plant.

Q. Was he one of the appraisers?

A. Well whether appraiser is the proper term or not, I do not know; he was one of the board that made the appraisement.

Q. And you were also one of the board that made an appraisement?

A. No sir, I was representing the Water Company.

Q. Well then, you were not exactly on opposite sides, were you?

A. Mr. Hider represented the city, a prospective purchaser, and I represented the interests of the water company that was going to sell the water plant.

COMMISSIONER: Who paid Mr. Hider?

A. The City of Memphis.

Q. And the Water Company paid you?

A. The Water Company paid me.

Q. Now you have stated that 3 per cent. ought to be allowed on the capital invested in original construction for the time it lies idle; that is of course on the assumption that it has lain idle?

A. Yes sir.

Q. You have also stated that this same 3 per cent. ought to be calculated on additions to the plant, or extensions of the plant?

A. Yes sir.

Q. Made during the time that the plant is running; now suppose that those extensions or additions are only paid for after they have been completed and put in running order, you wouldn't allow any 3 per cent. on it then, would you?

A. The assumption is that work is always paid for as it is
1696 being done.

Q. Well I am supposing that it is paid for after it has actually become an active plant?

A. Well then it wouldn't be paid, of course not.

Q. You have stated that 10 per cent. is ordinarily allowed for engineering services in the construction of a plant like this one. Would you regard a young man twenty-three years of age, who had never had any previous experience, competent to do the engineering work of construction for a plant like this here in Knoxville?

A. Not ordinarily.

Q. Would the services of such a man be worth the figure that you have stated?

A. They might be.

Q. Does such a man command the price as such an experienced engineer as yourself?

A. No sir.

Q. Well now, where the company actually employs an engineer at a stipulated salary, and that is paid out of the treasury of the company, the allowance should be fixed by what is actually paid, should it not?

A. No, not always.

Q. Otherwise, you might allow an incompetent engineer the same amount that would be allowed for the services of a competent one?

A. Yes sir, and *vice versa;* the only way you can get at it in an estimate is to take what is general and common.

Q. But I am asking about an estimate; supposing the company

has actually employed an engineer at a stipulated amount, and has paid that and no more, and that alone has entered into the construction of the plant; isn't that the proper basis of fixing the engineering services?

1697 A. No sir, I think not.

Q. Then you would allow the water company a premium for engineering services in addition to what it paid, would you?

A. Yes sir.

Q. And you would put that premium on the amount which you estimate should enter into the fixing of water rates, would you not?

A. Yes sir.

Q. And you wouldn't credit construction account with that premium, either, would you?

A. No sir, I would not.

Q. Now you have put on some per cent., I have forgotten what, for contractor's risks. Suppose that the actual risks were covered by insurance, and that insurance paid out of the treasury of the company, then the measure of contractor's risks, so far as the company when it constructed its own works, would be the amount of insurance paid, wouldn't it?

A. Well to the extent that that is the case, that would be true, if I understand your proposition correctly.

Q. Suppose further that where any accidents have happened they have been settled out of the treasury of the company, wouldn't the amount actually paid on such things represent the amount of contractor's risks?

A. You are referring to contractor's risks with regard to personal damages?

A. Yes sir?

A. I hadn't looked at it that way. There are a great many risks that a contractor takes besides injury to his employés, such as injury by water, storms, floods and strikes.

Q. But where the Company constructs its own plant, with its own employés who are in its own pay every day, whether the

1698 weather is good or bad, and which is paid for, as the work is done, whether it is blown down during construction or not, all of those risks are covered by the actual payments made by the company, are they not?

A. Well the company stands good to reap all the benefits that would accrue to a contractor, if a contractor did the work. Of course if expenses came up, and the account exceeds what would be a fair cost of the work, then when it comes to a case where the books would show that the work hadn't been at an inordinate cost, then that would be cancelled out in estimating the value of the work on a fair basis.

Q. But suppose nothing of that sort has been cancelled out, but that the full cost of the work wet days, and the expenses have been charged up to the account?

A. Well it is taking the same chance that the contractor does; if the value of the work is to be estimated afterwards on a fair basis, then the company stands good to reap the benefits.

Q. I am speaking now of the actual cost of the work?

A. That is what I refer to. Suppose in one case the cost is too low, and in another case the cost is too high, if you estimate it on a fair basis the value of that work, that is estimate it independently of the books, then the company will be a loser for all bad judgment, accidents and risks, and be a winner for the absence of them.

Q. When the work is done by the company directly, and by its own employés, should not the amount of contractor's risks be measured by the actual amount paid on those risks?

A. No, I think not.

1699 Q. Then you would give a company the premium on contractor's risks if you gave it an amount in excess of what it actually paid?

A. Sure, give it contractor's profits.

Q. And you would burden the water rates with that premium also, would you not?

A. I don't think the word "burden" is a good term. I would charge the water rates with it.

Q. Now you estimate some per cent. for promoter's services, or didn't you intend to include in that promotor's services in organizing the company?

A. A promoter, or whoever organized the company, whoever did it, either in money or time, is entitled to compensation for it.

Q. Now you refer to an organization period prior to the construction of the plant?

A. Yes sir.

Q. Now should not the amount for organization be measured by the amount actually paid for charter, legal services, &c. in view of the fact that you have already stated that it is so variant under different circumstances?

A. Well, you can classify the services under several heads. The gist of the matter is what expense, time and money has been incurred in getting the enterprise on foot up to the time of beginning construction, and for sometime after construction is commenced.

Q. You have stated that 10 per cent. was about the right figure for negotiating water company bonds; you mean water company bonds bearing interest at the rate of 5 per cent., do you not?

A. Yes sir.

Q. You have stated that the ordinary method of financing a water company is to sell its bonds. Do you think it the ordinary

1700 and proper method for a company, with a subscribed stock, which under the laws of the State should be paid into the treasury, to issue bonds for construction, and place them upon the market, without paying up their stock or in any way contributing their own funds that are due to the treasury of the company toward fixing a basis for the value of their bonds?

A. Well it is certainly improper to do anything unlawful. I did not make the answer to the question in the way the General seems to have understood it. My answer was that the borrowed money, or secured money was represented by stocks and bonds—mostly by bonds—that was the substance of the answer I think I gave to the question.

Q. Suppose a company had $200,000 of capital stock which the law required to be paid in full into the treasury of the company, and that the company proceeds without paying a dollar into the treasury, to issue $150,000 of bonds to erect a plant that could have been easily erected by the original stock; would you deem that a proper issuance and negotiation of bonds?

A. Under the General's statement of the law, it wouldn't be right.

Q. Would it not be unwise, and would it not injuriously affect the value, and place a serious obstacle in the way of the negotiation of the bonds to undertake to issue organization or construction bonds under those circumstances?

A. Of course every complicating influence is a handicap; as to how it might operate in this case, I am not able to say.

Q. Well it is never wise to negotiate construction bonds if the company has capital to build its plant before building it, is it?

A. I should say not.

1701 Q. You have assigned some value to the "going concern" That value is made by the expenditure of money for operating expenses as well as construction as the plant goes along, isn't it, and paid for in that way as the plant moves along?

A. It may not be represented by anything further than the loss of money; there are various forms that the expenses may take.

Q. Isn't it the operation of a plant that creates the going concern?

A. Well, in a very broad sense, yes.

Q. And that is, or should be paid from year to year as the plant moves along, out of its earnings, shouldn't it?

A. If it has any earnings.

Q. Well it isn't any going concern if it hasn't any earnings?

A. It may have net earnings.

Q. Mr. Johnston, have you ever testified before in a case with reference to what per cent. should be assigned for depreciating account?

A. Never in a water works case I think; I have in damage cases.

Q. What kind of damage cases?

A. Condemnation proceedings for rights-of-way for the Chicago Drainage Canal.

Q. Now isn't it a fact that the per cent for depreciation is based upon a supposed and generally accepted theory that the life of a plant is 40 years?

A. No sir, I believe not.

Q. Then what is the ordinary life of a water plant, taking an average life?

1702 A. You are speaking of a water works plant? I didn't understand that to apply to a water works plant.

Q. Yes, sir.

A. I think it is about 40 years; it runs 2 per cent. depreciation, taking it as a whole.

Q. At what interest do you place the depreciation fund?

A. Well say 4 or 5 per cent.

Q. Two per cent. of what, do you mean?

A. Two per cent. of the value of the plant.

Q. Well now will not 2 per cent. of the value of the plant produce much more than is necessary to replace the plant in 40 years?

A. I haven't the figures before me.

Q. Now isn't it customary to figure at 1½ per cent. for depreciation, and isn't that amount sufficient at the rate of interest you have stated, to produce an amount equal to the value of the plant in 40 years?

A. No, sir, not in my opinion.

Q. Have you made the calculation to see?

A. I have made the calculation, yes, sir.

Q. Have you made it with reference to this statement that you have just answered; my question is this, will not 1½ per cent. of the value of the plant placed at annual compound interest from year to year for forty years produce an amount equal to the cost of the plant?

A. I do not know now.

Q. If it will, then the depreciation ought to be 1½ per cent. instead of 2 per cent. oughtn't it?

A. No, sir.

Q. Ought it not to be just such an amount set aside annually?

A. If you are assuming forty years to be the life of the
1703 plant, which may or may not be the case.

Q. Well it may be more than forty years, may it not?

A. I am not prepared to answer you now, General.

Q. Don't large, and very much the larger portions of the plant, as for example, the buildings, cast iron pipe system, reservoir, &c., have a life from 60 to 75 years?

A. Some of it possibly. The oldest cast iron that was made was less than 60 years I believe.

Q. What per cent. of an active plant in a City the size of Knoxville is ordinarily the gross earnings set apart for operating expenses of the concern?

A. I am not prepared to answer.

Q. Now is it not a rule with your profession that from 25% to 33% is sufficient for that purpose?

A. I am not prepared to answer. At least, I know of no such rule.

Q. Suppose a company sustains a definite loss, or distinct loss in any particular year in operations, and by loss I mean it fails to make enough to pay operating expenses, depreciation account and interest, what do you do with that loss under your theory of the proper method of ascertaining the basis for reasonable rates; do you put it into construction account?

A. It ought to go into investment account until it is recouped somewhere.

Q. Then if this plant in 1890 sustained a loss of $100,000 in operation, and the inquiry was about reasonable rates in 1900, would you place that loss, with accrued interest on it in the construction account, or cost of the plant upon which those rates were to be calculated, would you?

A. In the absence of fraud, yes, sir.

1704 Q. And if a similar amount should have been lost during the intervening years, you would have placed them all, with accrued interest into the account for the year 1900, which was to be the basis for fixing the rates?

A. Yes, sir, I would.

Q. Those losses would not represent anything in the actual existing plant would they; in other words, they are something that have gone out of the value of the plant, are they not, as it exists?

A. No, sir, I understand those losses to be the difference between the revenues that the Water Company should have had to meet its fixed charges and operating expenses and profit, and what it actually received.

Q. But losses do not place anything additional into the plant, do they?

A. No, sir, not as I understand it.

Q. Now to understand you more fully, Mr. Johnston, of course the water consumers in 1890 were not the same as the water consumers in the year 1900. Now, if under your theory, the water company failed to collect enough from "A" a water consumer in the year 1890, you think that it is proper to place an additional burden on "B" in 1900 to make up that loss from its failure to collect from "A" in 1890 do you?

A. That is considering individuals outside of the company and parties to the contract, as I understand it. Of course it may work in individual cases so that one man will have to pay for what some other man ought to have had to have paid, but as I understand it, this is a contract between a city, which is a continuous body, and a water Company, which is a continuous body.

1705 Q. This is a case of rates to consumers only, and not of the City's rate at all—I mean its hydrant rate?

A. The consumer as a body, as I understand?

Q. Yes, sir.

A. Then in that event, I think that "B" would have to pay for what "A" got.

Q. What they lost on "A" in 1890 with interest?

A. Yes, sir.

Q. Now suppose the water company in 1890 had full scope to have increased its rates so as to make "A" pay enough to have satisfied all demands of the company. You would still think it was right to make "B" in 1900 make up the deficit that arose from the company's failure to collect the proper amount off of "A" in 1890, would you?

A. I still think so, yes, sir.

Q. That would make "B" pay in 1900 for water furnished to "A" in 1890 with ten years interest, wouldn't it?

A. Yes, sir.

Q. And the fault in the case supposed, would be that of the Water Company in failing to adjust its rates properly, and not the fault of "A" or "B?"

A. Yes, sir, in that statement of the case, it would.

Q. Well, Mr. Johnston, you speak of maintenance. As a separate item now, does not maintenance, so far as it consists of ordinary repairs, enter into operation expense, or does it enter into the construction account, according to your analysis?

A. It depends upon whether there is revenue enough to meet it. If money has to be put up to keep it in repair, that goes into capital account.

1706 Q. Where does it belong properly?

A. That depends on where the money comes from to pay for it.

Q. Where do you assign it primarily?

A. That is a question of classification; it is a matter that ought to be provided for in the water rates or in current revenues.

Q. That is for ordinary repairs, &c.?

A. Yes, sir, or for any item of maintenance—the plant should be maintained at a standard as good as new at all times.

Q. Then you include under maintenance, the charge for general depreciation, do you?

A. In that classification I would, yes, sir.

Q. Not only current repairs, but such replacements as are essential from time to time to keep up the plant to the standard of its original excellence?

A. Yes, sir.

Q. And you think 2 per cent. would be sufficient for that purpose for depreciation fund?

A. For depreciation fund, yes, sir.

Q. Now, Mr. Johnston, you have allowed, I believe 10 per cent. for engineering services?

A. Yes, sir.

Q. Suppose the company in point of fact employed an engineer and paid him out of the current funds of the company a much less per cent. than that; ought not the smaller sum that was actually paid to control in this matter?

A. Well, no, not in the valuation of the plant. It appears to me that the valuation should be based just as Mr. Wheeler has made it. They might have paid that engineer 20 per cent. Then

1707 would it have been fair to have charged engineering services at 20 per cent.? Or they may have paid him only 1 per cent. Then would it have been proper to have charged engineering services at 1 per cent.? My theory is to charge what is fair and proper.

Q. As between the people that are served by this company and the company itself, isn't it fair to assume as correct and just the amount that was actually paid for engineering?

A. I think not.

Q. Now supposing that in the operating expense account in this case, they have charged to that account all of the engineering services; what would you do with this 10 per cent. on construction?

A. I would estimate it just the same as if they had gotten everything that was involved in construction for nothing. I think it is

what the actual current value of the plant was at the time it was built.

Q. Then do you think the engineer's expenses should be charged both against construction account and operating expense account?

A. That is a matter of book-keeping, but in my opinion it would be bad book-keeping.

Q. Do you think engineering services should be charged against the construction account?

A. As one item entering into construction account, yes, sir.

Q. And if they have actually been put into operating expense account, they are in the wrong place, are they not, according to good book-keeping?

A. Well that raises a question that seems to me to have two understandings.

Q. Well give us both of them?

1708 A. In making an estimate of the plant, such as Mr. Wheeler has done, that is without the aid of books, it is proper to consider engineering expenses as part of the construction account. Now when I say they should be made a part of construction account, I mean they should be made a part of construction account in an estimate of that character. If you are endeavoring to find out what a piece of work costs from the showing of the books, and they have charged engineering expenses, or any other item twice, then it is wrong.

Q. Well you wouldn't put engineering expenses into construction account unless they were properly assignable to that account, would you?

A. I should not.

Q. What do you understand that you came here to testify about in November, Mr. Johnston?

A. In a general way I was expected to testify in regard to those elements that contribute toward the value of a water works plant.

Q. Then why did you go over the plant at that time, if you were going to testify on that subject?

A. In order to see the plant and get what assistance I could from it.

Q. You cannot fix, I believe, a per cent. of the gross earnings of a plant in a City like Knoxville that is properly assignable to operating expenses?

A. No, sir.

And further deponent saith not.

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The further taking of depositions was adjourned until Friday, February 6th, 1903, at 9 o'clock A. M.

1709 Friday, February 6th, 1903, the further taking of depositions was *resumed* until Tuesday, February 10th, 1903.

TUESDAY, MORNING *February 10th*, 1903—9 o'clock a. m.

The further taking of depositions resumed.

Next witness, ALEX MCMILLAN, called on behalf of the plaintiff, being first duly sworn, testified as follows:

Examination by Mr. CALDWELL:

Q. Mr. McMillan, where do you live and what is your business?

A. No. 1221 White Avenue, Knoxville, Tennessee; Real estate and loans.

Q. Are you familiar with real estate values in Knoxville?

A. I have been in the real estate business here for the last fifteen years.

Q. Well do you think you are familiar with real estate values?

A. I think I know the town values pretty well.

Q. Are you acquainted with the different pieces of real estate owned by the Knoxville Water Company?

A. Yes, sir.

Q. I want to ask you to value, without considering the houses that stand upon it, the following described pieces of real estate belonging to the Knoxville Water Company: "At River Pumping Station, fronting 100 feet on Craig Street by 150 feet in depth toward river, thence 150 feet wide about 330 feet to the river, containing about 64,500 sq. feet. Purchased from City of Knoxville by deed of July 27, 1882." What do you value that piece of property at?

A. In valuing the property of the Knoxville Water Company, I have figured out that the Company owns 800 feet frontage along Front street, running back to the river, upon which I have put a valuation of $10.00 per front foot. They own 150 feet frontage along Craig street running back between parallel lines to Front street upon which I put a valuation of $2,250.00.

1710 Q. What about the Block enclosed by Condon, Pritchard, Payne and Lee streets, on which filter plant and high service station stands, area being about 66,000 sq. feet, estimating it without reference to the buildings on it?

A. I put a valuation on that square of ground at $3,000.00.

Q. Next "Lot of land on Gay street, used for office purposes" where the office of the Water Company now is, "fronting 25 feet on Gay street and running back westerly about 140 feet to an alley?

A. I put a valuation on this property of $10,000.00.

Q. I will ask you next to place a value upon the 14 acres surrounding the Tillery Springs, acquired by the Knoxville Water Company from the Lonsdale-Beaumont Water Company?

A. I put a valuation of $700.00 on that 14 acres.

Q. What value do you put on the old pumping station lot on Middlebrook road and Third creek of about 1½ acres?

A. I put a valuation on that 600 feet frontage of $1,000.00.

Q. I will ask you next to value the two lots in the Beaumont addition in which the Lonsdale-Beaumont Company's old standpipe is erected?

A. I think a valuation of $600.00 on that Block of land is reasonable.

Q. I will ask you next to estimate the value of the Block enclosed by Condon, Lee, Payne and Patterson streets, containing the reservoir, area being about 66,000 sq. feet?

A. I put a valuation upon that block of ground of $3,000.00 the same as the adjoining square on which the standpipe is located.

1711 Cross-examination by G. W. PICKLE:

Q. I want to ask you Mr. McMillan whether or not the 800 feet river frontage that you value at $10.00 a foot embraces 100 feet purchased from M. D. Arnold and 550 feet purchased from Strong and Epps, and the remainder of 150 feet of the original purchase from the City for the Reservoir site?

A. It does.

Q. I will ask you for what purpose the 100 feet purchased from Arnold is used, if for any purpose at present by the Water Company?

A. I don't think that they use this 100 feet of ground, but it adjoins their pumping station on the west and I presume that they bought this piece of ground for the same reason that they bought the 550 feet on its eastern side, so as to enable them to control the river frontage contiguous to their pumping station, and to keep away from their pumping station any objectionable features that might be put there that might contaminate their water supply.

Q. The Arnold tract is down the river from the reservoir tract, isn't it?

A. It is.

Q. And the Strong and Epps tract is above and adjoining the original reservoir tract, isn't it?

A. That is correct.

Q. How much of the Strong and Epps tract, if any, is at present occupied and used by the Water Company for any purpose?

A. I don't think they have any buildings on the Strong and Epps purchase at all; that portion of the land however has more level land upon it, and it gives them an access to their pumping
1712 station over a level route from the upper end of Front street which they couldn't possibly get from any other direction.

Q. The chief benefit of that Strong and Epps tract to the Water Company is to get a right-of-way through there, isn't it?

A. That is my idea.

Q. It is elevated ground?

A. All of the ground on the south side of Front street is pretty abrupt, but the Strong and Epps purchase as stated above has much more level land upon it than any other portion of this river frontage.

Q. Is the elevation of the Strong and Epps tract above the level of the river the same as the old reservoir tract?

A. Yes sir.

Q. Does not the Strong and Epps tract run nearly to the creek that cuts through the high land that borders on the river in that locality?

A. It takes in pretty much all the land that lies between the pumping station and what is known as the White Spring Branch.

Q. Mr. McMillan the values you have fixed on this property is as of the present time, are they?

A. Yes sir.

Q. Values are somewhat higher now than they were one and a half or two years ago on real estate in Knoxville?

A. Yes sir, I put a valuation on this 800 feet frontage at $3.00 a front foot more than this 550 feet that was purchased by the Water Company from Strong and Epps a few years ago.

Q. And that is on account of the rise of the price between the date of the purchase and the present time?

A. Yes sir, and the further reason that I put such a valuation is that that section of the town has improved considerably dur-

1713 ing the past two or three years—Front street has been opened up and the general surroundings are much better than they were a few years ago.

Q. The valuation which you place on the old Lonsdale-Beaumont pumping station of $1,000.00, is low, isn't it?

A. I consider it a reasonably low valuation.

Q. It is not being used by the present company, is it?

A. I don't think it is.

Q. It lies outside of the city does it?

A. Yes sir.

And further deponent saith not.

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1714 THOMAS E. JONES, next witness called on behalf of the plaintiff, being first duly sworn deposed as follows:

Examination by Mr. CALDWELL:

Q. You live in Knoxville, Mr. Jones?

A. Yes sir.

Q. What is your business?

A. Real estate agent.

Q. How long have you been in the real estate business?

A. I have been working at it about 10 years.

Q. Are you acquainted with real estate values in Knoxville?

A. I think so.

Q. Have you examined the different pieces of real estate owned by the Knoxville Water Company on the request of that company to place a value on them?

A. Yes sir.

Q. Please state what your estimate of the value of each one of the pieces of real estate of the Knoxville Water Company is taking them

in the order in which they appear in the statement handed you by the Water Company?

A. "No. 1.-A At River Station, fronting 100 feet on Craig street by 150 feet in depth toward river, thence 150 feet wide about 330 feet to the river, containing about 64,500 sq. feet" I value that piece at $5,000.00, not including the houses.

"B. Block enclosed by Condon, Lee, Payne and Patterson streets containing the reservoir"; I value that at $3,000.00.

"C. Block enclosed by Condon, Pritchard, Payne and Lee streets (on which filter plant and high service station was built)" I value that at $3,000.00.

"D. Fronting 50 feet on Craig street by 150 feet in depth"; I value that at $1,000.00.

"E. Lot of land on Gay street used for office purposes, fronting 25 feet on Gay street and extending westerly about 140 feet
1715 2 inch to alley"; I value that at $8,500.00.

Land extending from the pumping station easterly to Cardwell street and lying between Front street and the river, I think that is worth $3,000.00.

Land extending from the pumping station westerly about 100 feet to land of Rush Strong, that would be 100 feet on Front street and running back to the river, I think that is worth $1,000.00 for the two lots. I see they have it here on the paper "Purchased of M. D. Arnold in exchange for land between Craig and Front streets, 50 feet in width, adjoining said Arnold, for which the company received $500.00." That is their own personal trade I presume.

Q. Have you covered that in your valuation?

A. That is a matter that I didn't quite understand.

On the Tillery Springs lot, 14 acres, I valued that at $1,000.00.

The pumping station lot on Middlebrook road and Third creek, about 1¼ acres in there, I value that at $600.00.

Standpipe lot Beaumont addition 100 by 200 ft. I value at $300.00; that would be lots 17 and 18 in the Lonsdale addition.

Cross examination waived.

And further deponent saith not.

——— ———.

It is agreed by and between counsel for both sides that John F. Edington, the Stenographer, may sign the name of the witness to the above deposition.

1716 JOHN P. MURPHY, next witness called on behalf of the plaintiff, having been first duly sworn deposed as follows:

Examination by Mr. CALDWELL:

Q. Where do you live Mr. Murphy?

A. I live in the City of Knoxville, 8th. Ward, in the Harris Building.

Q. Are you an Alderman of the City now?

A. Yes sir.

Q. Were you an Alderman of the City on the 30th. of March 1901?

A. Yes sir.

Q. And for how long before that time?

A. Well I couldn't tell you just how many years; off and on for several years.

Q. Has it been as far back as January the 1st. 1901?

A. Yes sir.

Q. Do you remember the fact that an ordinance was passed by the Board of Mayor and Aldermen on the 30th. of March 1901?

A. I do sir.

Q. —regulating the rates of the Knoxville Water Company?

A. Yes sir.

Q. Did you make any investigations as to the value of the plant and property of the Knoxville Water Company, the effect of the meter rates prescribed in the ordinance of March 30, 1901?

A. Did I make any investigation?

Q. Yes sir.

A. Not personally.

Q. Did you personally give any attention to the ascertainment of the reduction which the proposed ordinance would make in the income of the Knoxville Water Company?

A. Not personally I didn't.

Q. Did you personally know the amount of its gross income?

A. No sir.

1717 Q. Or of its annual operating expenses?

A. No sir.

Q. You say that you did not personally investigate these questions; were you informed upon them in any way?

A. Yes sir, through the Water Committee.

Q. What did the Water Committee do in that connection that you know of personally?

A. Well personally, they made a report to the Council.

Q. Was it a verbal or written report?

A. I think it was a written report sir.

Q. Did that report state what the income of the Water Company was?

A. No, I don't think it did.

Q. Did it state the value of the plant of the Water Company?

A. I don't think it did.

Q. Did the report of the Committee state or undertake to state how much the gross income of the Water Company would be reduced by the ordinance contemplated?

A. No sir, I don't think it did.

Q. Did it undertake to state what reduction of rates would be accomplished by the ordinance?

Mr. PICKLE: All of this inquiry as to what the written report showed is objected to, as the best evidence of it would be a copy of the report itself.

COMMISSIONER: The exception is good for the present until he has shown that he cannot find the report.

Mr. CALDWELL: Then you sustain it in so far as I ask for the contents of the paper?

COMMISSIONER: Yes sir.

Q. Did you have any information upon these several subjects upon which I have asked you Mr. Murphy, except such information as you obtained from hearing the reading of that
1718 report?

A. That was all.

Cross-examination by G. W. PICKLE:

Q. Mr. Murphy, you had what was known as a Water Works Committee of the Board of Mayor and Aldermen, composed of three or more members of that Board of Aldermen, did you not?

A. Yes sir.

Q. And the matter of investigation of the ordinance, and its propriety and reasonableness was referred to it, as were all other matters relating to that particular subject, were they not?

A. Yes sir.

Q. That is to make an investigation and report back for the information of the full Board?

A. That is right.

Q. The Board of Mayor and Aldermen have various committees, hav-n't they?

A. Yes sir.

Q. And all matters of importance that demand investigation are referred to appropriate committees to investigate and report back to the Board?

A. To investigate and report back to the Board, yes sir.

Q. Is it practicable to deal with important matters in any other method?

A. That has always been the method of the Board.

Mr. CALDWELL: I object to the question.

COMMISSIONER: I sustain the exception.

Q. Q. I will ask you if that is not customary in all bodies of that character?

A. Yes sir.

Mr. CALDWELL: I object to the question.

Overruled.

Q. This matter of the regulation of water rates was pending before the Board of Mayor and Aldermen from first to last more than two years, wasn't it?

A. About that time.

Q. And during that time it was frequently discussed, wasn't it, by the Board?

A. Yes sir.

1719 Q. It was discussed through the newspapers of the city during that period?

A. Yes sir.

Q. I will ask you if the attorney and officers of the Water Company were not heard before the Board and Water Committee on more than one occasion in regard to this matter?

A. Yes sir, I remember two occasions in which we had an open meeting with them.

Q. Did you have a special meeting or meetings for that purpose?

A. It was an open meeting and they were invited to talk to the Board.

Q. I will ask you if your Board did not pass this particular ordinance substantially as it is now and identical so far as the rates fixed are concerned, three times?

A. Yes sir, they passed it three times; I think the ordinance was regularly passed.

Q. But on account of some defects in it, it was passed three times?

A. It was passed again.

Q. I mean it was theretofore passed upon by your Board at as many as nine different meetings, wasn't it?

A. Yes sir. Well, no the ordinance was passed once at three meetings, and then on account of some defect it was passed again at three different meetings and then the defect cured.

Q. And then wasn't it passed again on account of the word "annually" being omitted?

A. No sir, that is the time I have reference to.

Q. Now after the ordinance had been passed twice, did not your Board suspend the third passage, and did not the Mayor seek to ascertain from the Water Company for the purpose of enabling the Board to act intelligently before passing the ordinance on the final and third reading, the income of this Company, its operating expenses, its bonded or other indebtedness and other information of a character that would give the Board full information to enable them to act intelligently in the matter?

1720

A. I remember that the Board suspended the ordinance and tried to get some information from the Water Company, but I don't remember what it was or how much.

Q. Do you remember there was some correspondence passed that was published in the papers at the time between the Chairman of the Water Committee and Mr. Elbert Wheeler, the Treasurer of this Company?

A. I don't recall any correspondence.

Q. Do you remember or not that you sought all the information you could get from the company and from other sources?

A. Yes sir, we did that; that is the Chairman of the Committee did.

Q. You were not yourself on the Water Committee, were you?

A. No sir.

Q. You were a member of other committees?

A. Yes sir.

Q. Who composed the Water Committee or the active members of it?

A. Mr. Birdsong, I think and Mr. Bell. I do not know whether the other member was Mr. Miller or not; I cannot say who was the third member, and I cannot say positively about Bell, but I think he was a member of the committee.

Q. You do remember that the attorney and some of the officers of this company came before the Committee?

A. Mr. Cates came before the Board and made a talk.

Q. Did he not take the position, and did not the officers also that appeared before the Board take the position that the city had no right to regulate the water rates and therefore you had no right to look into the business of the company?

A. I cannot say that they made that statement. They made an argument that the water rates they were giving would com-
1721 pare favorably with any other city. They made an argument of course for their side.

Q. Is it not a fact that the water rates of other cities were brought before your Board and compared with these rates?

A. Yes sir, both as to municipal ownership and individual ownership.

Q. Were you one of the Board of Aldermen about the time this water works business began to be agitated in Knoxville?

A. When was that?

Q. From 1879 to 1882?

A. Yes sir, I was in the Board in 1882.

Q. Did you know Fuller the engineer of the Knoxville Water Company during the time of the original construction of its plant?

A. Yes sir.

Q. How old a man was he?

A. Well I suppose Fuller was a man between 24 and 28 years of age; he was a young man.

Q. Had he ever had any experience before that time in the water works business?

A. I could not say; he used to be a student at the University. I knew him at the University previous to that time. I don't know what experience he had after he left school.

Q. Did not the city itself prepare to build water works?

A. No sir.

Q. Did it not purchase a reservoir site?

A. It purchased a reservoir site and stopped there, as far as my information goes now.

Q. Did they not employ Moses Lane as Civil Engineer to design a plant?

A. Yes sir.

Q. They paid for that didn't they?

A. Yes sir.

Q. There was considerable trouble between the City Council and the Water Works about their failure to construct their plant
1722 according to the plans of Moses Lane, wasn't there?

A. Yes sir, considerable trouble.

Q. Do you remember the price at which the parties proposed to construct the Water Works according to Moses Lane's plans?

A. I do not remember exactly the price General.

Q. Wasn't it about $75,000.00?

A. Along about that, yes sir. Then there was another party in town too who had a bid in—a Knoxville party—Van Gilder, Martin Ross and some other parties.

Q. That was for less than $100,000.00?

A. I cannot remember exactly what their figures were, but their figures were higher than the people that got the contract. There was a disposition for the city to build it at first, but I think that was knocked out.

Q. The Water Company got the benefit of the reservoir site and of the surveys, &c., made by Moses Lane when they took upon themselves to build the Water Plant?

A. Yes sir.

Q. I will ask you if there wasn't two or three bids for less than $100,000.00 to build according to the Moses Lane plan?

A. I cannot remember General, because it has been a long time and I was pretty young at that time and I cannot exactly recall it to mind.

Q. Do you remember how many of the Board of Mayor and Aldermen at the time this contract was let were stockholders or officers in the Knoxville Water Company?

A. No sir, I cannot tell you at all.

Q. Some of them were, were they not?

A. I cannot say as to that. I know that I wasn't, and they didn't ask me to be—if they had I might have been a stockholder myself, but I wasn't consulted.

1723 Redirect examination by Mr. CALDWELL:

Q. As I understand Mr. Murphy, you had no information upon the subject of the income or the reduction of it to be accomplished by the ordinance, or any similar matters, except what you got, through the report of the committee?

A. That is it; we depended wholly upon the report of the Committee for our information.

Recross-examination by Mr. PICKLE:

Q. Do you remember when the officers of the Company were before you that you asked for that sort of information, or whether any questions were asked?

A. I think there were some questions put to Mr. Cates along that line.

And further deponent saith not.

——— ———.

1724 ROBERT E. McMILLAN, next witness called on behalf of the plaintiff, having been first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Mr. McMillan, are you a member of the Board of Aldermen in the City of Knoxville, now?

A. Yes sir I am.

Q. Were you a member of the Board on March the 30th, 1901?

A. Yes sir.

Q. Do you remember the fact that an ordinance was passed by the Board on March 30th, 1901, for the purpose of regulating the water rates of the Knoxville Water Company?

A. Yes sir.

Q. Did you personally make any investigations on your own behalf preliminary to voting upon that ordinance?

A. Through the Water Committee I did. Committees of the Council are supposed to go into such things thoroughly and make an investigation and report back, and I acted upon their figures.

Q. The information you had then was exclusively from the Water Committee's report?

A. Yes sir, headed by Mr. Birdsong.

Q. I wish you would tell me who the other members of the Committee were at that time?

A. I don't believe I can tell you Mr. Caldwell. I have a book which has all the committees of last year on it but I cannot recall to mind now who they were.

Q. Did you personally know what the income of the Knoxville Water Company was on March the 30th, 1901, or what its indebtedness or what its operating expenses were?

A. I believe you are a little too far back for me, no sir.

1725 Q. My question is, did you at that time know?

A. I think I did; I am not sure, but I am pretty sure that I did.

Q. Did you know at that time what the result of such a reduction would be?

A. No, I will take that back. I believe that these letters,—that letters were written to ascertain in regard to those facts, but that we couldn't get the figures; that is as well as I remember now.

Q. At all events your information came exclusively through the Water Committee?

A. Yes, sir.

Cross examination waived.

And further deponent saith not.

——— ———.

1726 M. S. McCLELLAND, next witness called on behalf of the plaintiff, having been first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Mr. McClelland were you a member of the Board of Aldermen of the city of Knoxville on the 30th. of March, 1901?

A. Yes sir.

Q. Do you remember that at that date an ordinance was passed by the Board of Mayor and Aldermen for the purpose of regulating the rates of the Knoxville Water Company?

A. Yes sir, I remember something about it.

Q. Did you make any personal investigations as to the value of

the property of the Knoxville Water Company and the amount of its income?

A. No sir.

Q. Did you make any investigations in regard to its indebtedness?

A. No sir.

Q. Did you examine on your own account into the effect of the meter rates or fixture rates proposed by the ordinance?

A. No sir.

Q. Did you know what its operating expenses were?

A. No sir.

Q. From what source did you acquire the information upon which you voted?

A. That was referred to a Committee Judge, and whenever a Committee reports to the body, we generally take it for granted that the Committee has done its duty, and go accordingly, and we vote accordingly to the way they recommend.

Q. Was there any discussion of the matter, as you remember, in the Board of Aldermen?

A. No sir I don't remember anything about it, Judge.

1727 Cross-examination by Mr. PICKLE:

Q. The Board of Mayor and Aldermen did investigate the matter through a standing Water Committee, didn't they Mr. McClelland?

A. Oh yes sir, they had a Water Committee.

Q. And that Water Committee reported from time to time to the Board of Aldermen?

A. I don't remember that they ever reported but once; I don't remember that they did.

Q. Don't you remember that this ordinance was passed two or three times on account of some slight defects—that it was passed over a time or two?

A. No sir, I don't remember how that is.

Q. You don't remember how that is?

A. No sir, I do not; I wasn't on the Water Committee and therefore paid but very little attention to it.

Q. Then you depended for your information upon the Committee that was appointed by the Board of Mayor and Aldermen?

A. That was customary—the Chairmen of different Committees are supposed to investigate such matters. I was with the Committee one evening a short time while they were working on the ordinance, but I just went in there voluntarily.

And further deponent saith not.

——— ———.

1728 GEO. A. GAMMON, next witness called on behalf of the plaintiff, being duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Mr. Gammon are you an Alderman of the city of Knoxville now?

A. I am sir.

Q. Were you an Alderman of said city on the 30th of March 1901 when an ordinance was passed for the purpose of regulating the water rates of the Knoxville Water Company?

A. I was sir.

Q. Were you on the Water Committee?

A. I was not sir.

Q. Did you personally make any investigations at that time about the value of the plant of the Knoxville Water Company?

A. No sir, only through our Committee.

Q. Did you investigate the income or the debt of the Water Company for yourself?

A. Only as promulgated by our Committee on Water.

Q. I take it then that you relied exclusively upon the Committee?

A. Exclusively sir; it is our custom in the city Council to accept the report of the Committee.

Q. Do you know whether it reported more than once?

A. On water?

Q. Yes sir?

A. Oh yes sir, I think a number of times, if my recollection serves me correctly.

Cross-examination by G. W. PICKLE:

Q. Mr. Gammon, this ordinance regulating water rates was before the City Council for more than a year from first to last wasn't it?

A. I think it was sir.

Q. It was passed three times, containing the identical rates provided in this ordinance of March the 30th, 1901, was it not, on account of some irregularity?

1729 A. Yes sir, on account of some irregularity. We had some call meetings, if I recollect correctly.

Q. Do you know whether any officers of the company appeared before the Board and discussed the matter during that period?

A. Mr. Cates, the attorney for the company was there on a number of occasions, Mr. Wheeler was there on one or two occasions and Mr. Kimball was there on one occasion that I remember of. Mr. Cates appeared before us a number of times.

Q. In this connection, did they go extensively into the matter of the regulation of their rates?

A. They did sir. By request of Mr. Cates we had special call meetings, and we always granted him a hearing.

Q. Did the members of the Board ask questions seeking information about the condition of the company?

A. Yes sir, from the attorney we did sir.

Q. I will ask you whether or not it was the desire and effort of the Council to obtain the fullest information before passing upon this ordinance finally?

Mr. CALDWELL: We object to the question.
Sustained.

Q. I will ask you whether or not the final passage of this ordinance was delayed for the purpose of obtaining information and some correspondence which ensued between the Chairman of your Water Committee and the officers of the Water Company?

A. On one occasion we awaited an answer to a letter from Mr. Wheeler before we passed the ordinance—we delayed the passage of the ordinance until we could hear from Mr. Wheeler, and after that the ordinance passed on its third and final reading, is my recollection.

Q. I will ask you whether in the meantime the attorney or
1730 officers of the company appeared before the Board and discussed the matter?

A. On or about that time attorney Cates was there, but I don't remember the details of the discussion General, nor the exact date, but it was on or about that time—perhaps during the interval.

Q. Is it not a fact that the discussions of the Water Committee on this subject extended over months before this particular ordinance was passed?

A. Yes sir it is a fact; it extended over a good many months.

Mr. CALDWELL: I object to the question.
Sustained.

Q. I will ask you if you know as a fact that the Chairman of the Water Committee was engaged in those discussions at that time?

A. Yes sir he was; I know that full well, because I was in his office frequently and he showed me the comparison of rates between this and other cities.

Q. He then exhibited to you the evidences that he was comparing with?

A. Yes sir he had quite a quantity of it. I would say he had a stack that high. In fact he read to the Board at one time comparisons from 25 to 30 cities, I don't remember the exact number.

Q. On the occasions you were in his office and so saw the stack of papers, you said they were about "that high"; how high do you mean?

A. Well I would say from five to six inches sir of different books and pamphlets of other cities—that is giving the rates of other cities.

Redirect examination by Mr. CALDWELL:

Q. Did you rely upon the comparison of rates in deciding how you would vote on this ordinance?

A. Well, yes I guess I did; we relied upon the reports of
1731 the Chairman of the Water Works Committee, because that is customary in the Council.

Q. By my question I meant was the comparison of rates the controlling consideration in your vote *of* the ordinance?

A. No sir, I think it was more the report of the Chairman of the Water Committee. I guess it may have had its influence on my decision.

Q. That report of the Chairman of the Committee was made in writing?

A. Yes sir, and always read by him. I speak positively on that subject because up to that time I had never missed a meeting of the City Council, and desiring to learn as much about the water rates as I could, I paid close attention to those reports.

And further deponent saith not.

— —.

1732 H. M. AIKEN, next witness called on behalf of the plaintiff, having been first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Are you a member of the Board of Aldermen of the City of Knoxville?

A. Yes sir.

Q. Were you a member of that Board March 30th 1901?

A. Yes sir.

Q. Do you remember the fact that on March the 30th 1901 an ordinance was passed by the Board of Mayor and Aldermen for the purpose of regulating the water rates of the Knoxville Water Company?

A. I remember that such an ordinance was passed. I do not recall the date, but it was during that year.

Q. Prior to the passage of that ordinance, and for the purpose of determining whether it should be passed or not, did you personally make any investigations into the following subjects; the value of the plant of the Knoxville Water Company, the amount of its debt, the amount of its gross income and its operating expenses?

A. I did not; I was not a member of the Water Committee and did not go into that investigation at all.

Q. In casting your vote upon that ordinance, upon what did you rely?

A. Upon the information given the Board by the Water Committee through its Chairman.

Q. Do you remember whether or not the report of the Water Committee was discussed at any length when presented?

A. I cannot say that I do, Mr. Caldwell; I remember that on different ocasions Mr. Birdsong, who was Chairman of that
1733 Committee, would make his report at some length, giving the result of his correspondence, and securing rates from other cities and comparing them with ours, but there was very little, or no discussion upon the subject as I remember.

Cross examination waived.

And further deponent saith not.

— —.

1734 W. H. KEPHART, next witness called on behalf of the plaintiff, having been first duly sworn, deposed as follows:—

Examination by Mr. CALDWELL:

Q. Mr. Kephart, are you at present officially connected with the city of Knoxville?

A. Yes sir.

Q. In what capactiy?

A. Alderman from the 5th Ward.

Q. How long have you been an Alderman?

A. Nearly two years.

Q. Were you a member of the Board of Aldermen on the 30th of March 1901 when what is known as the water rates ordinance was passed?

A. I think that was just before my time. I was elected to fill the place of Mr. Trigg, and just at the time in 1901 that occurred I am unable to say. I believe it was just before I went in that they passed that ordinance; that is my recollection of it now.

Q. Do you remember hearing the Chairman of the Water Committee, Mr. Birdsong, make any reports in regard to the ordinance, that is the one that was passed the 30th of March 1901, or about that time?

A. Now I recall that that ordinance was passed just as I went in, I think a meeting or two after I was elected. Yes I remember his making a report. He has made various and sundry reports on the Water question from time to time, he being Chairman of the Water Committee.

Q. Now had you personally, independently of the report of the Water Committee made any investigations for yourself in regard to the affairs of the Water Company?

A. Only in connection with Mr. Birdsong's work. I went to his office a number of times and we went over and made com-

1735 parisons with the reports, figures and rates given in the reports from city officials of other places, and Mr. Birdsong had gotten all these things together himself and as is usually the case, the Chairman does all the work, but he went over these figures with me and called my attention to the various comparisons and rates, showing the advantages and disadvantages in each case.

Q. You say you worked with Mr. Birdsong some in that way?

A. Yes sir.

Q. Was he doing anything except getting a comparison of rates from different cities?

A. Well I don't know whether he did anything else or not; I know he did that much.

Q. And that was the work that you were engaged in with him?

A. Yes sir, that is in getting up this last ordinance.

Cross-examination by Mr. PICKLE:

Q. Mr. Birdsong, the Chairman of the Water Committee, is a very active and efficient member of the Board of Aldermen, isn't he?

A. I should say so.

Q. He is a good worker isn't he?
A. He seems to be a good worker, yes sir.
Q. He had gotten together a good deal of information and literature on the subject which he exhibited to you?
A. Yes sir.

Mr. CALDWELL: Did that literature which you refer to as being accumulated by Mr. Birdsong apply to anything except a comparison of rates between different cities?

A. As I recall it, it did not.
Q. I will ask you if the comparison in rates wasn't between cities of like situation as Knoxville?
A. Yes sir, as nearly as possible.
Q. And of like population, &c.?
A. Yes sir.
1736 Q. Cities differently situated and of different population were excluded were they not, from the comparison?
A. Usually, yes sir.

And further deponent saith not.

——— ———.

1737 A. J. MILLER, next witness called on behalf of the plaintiff, having been first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Mr. Miller are you a member of the Board of Aldermen of the city of Knoxville?
A. I am.
Q. Were you a member of that Board on the 30th. of March 1901, the date of the passage of an ordinance by the Board of Aldermen for the purpose of regulating the water rates of the Knoxville Water Company?
A. I was.
Q. In voting upon that ordinance did you rely entirely upon the information furnished you by the report of the Water Committee?
A. I did not.
Q. Were you on the Water Committee?
A. I was not.
Q. Did you know at the time of the passage of that ordinance March 30th. 1901 anything in regard to the following subjects, first, the value of the plant of the Knoxville Water Company; second, the amount of its gross income; third, the amount of its debt and fourth, the amount of its annual operating expenses?
A. I did not at the time the ordinance was first passed, but before the final reading we called on them for, I think, just what you have enumerated there, and they referred it to General Wheeler and General Wheeler wrote us a letter in which he answered none of the questions.
Q. Well what information did you have then?
A. Well the information that I had, we met and made a rate and

we had several circulars from different water companies that were furnishing cities with water—I don't remember them all there were twelve, fifteen or there might have been twenty or thirty
1738 of them, and we classed their rates, we considered their proximity to coal, also the distance they had to bring their water, that is of cities about the size of Knoxville and while we didn't make our rate the lowest or highest of any of these other cities, yet we struck an average and then put it in our ordinance.

Q. Who was present when that was done?

A. Well sir Mr. Birdsong, Mr. Bob McMillan, Mr. McClelland, Reuben Cates and myself.

Q. That ordinance was drawn then upon that basis?

A. I suppose it was; we met and made the rates and I think they were made upon that basis.

Q. Was that a special committee of the Board of Aldermen or was it a committee held by agreement of the gentlemen composing it?

A. Well, Birdsong invited me around, I know that, but I don't know whether the others had invitations or not; notwithstanding we all met there.

Q. Where was that meeting?

A. In Reuben Cates' office.

Q. Were those rates fixed at the meeting as finally appeared in the ordinance?

A. Yes sir I think they are the same rates; I know that a part were, but as to recollecting all, I cannot say.

Q. What time was that Mr. Miller with reference to the correspondence between Mayor Heiskell and Mr. Birdsong upon the one side with Messers. Wheeler or the Knoxville Water Company on the other side?

A. I am not able to state.

Q. What was the exact nature of this literature that you used in framing that ordinance?

A. It was pamphlets from the different companies stating the rate that they charged, and I am not sure what other data was gathered from this but anyhow that was the main points we considered,
1739 that is the rates charged in similar cities the size of Knoxville.

Q. Was that the controlling reason in establishing those rates?

A. What do you mean Mr. Caldwell?

Q. I mean was that the principal ground upon which the rates were established?

A. We took into consideration as I say the proximity to fuel and the distance that the water was brought—these pamphlets stated that—or at least they stated the distance the water was brought, but the proximity to fuel, I cannot say—but we knew that of course.

Q. You say you cannot assign a date to that meeting?

A. No sir I cannot for I have nothing by which I can go, that is previous to the introduction of the ordinance.

Q. You are an attorney Mr. Miller?

A. Yes sir.

Q. I assume that your services were called for more or less in a professional capacity?

A. They were not, as an Alderman.

Q. I will ask you again how far you can be sure that the rates agreed upon at that meeting in Mr. Reuben Cates' office were the same rates that were finally adopted?

A. Well sir I only have the statement of Mr. Birdsong, and I know that some of the rates were the same, for he stated there that he had framed the ordinance in accordance with the rates that we fixed at the time.

Q. Where do you mean that "he stated there"?

A. He stated right there at the time that we were in the meeting; that is, after the meeting was over he said, I will prepare an ordinance in accordance with these rates.

Cross-examination by Mr. PICKLE:

Q. That meeting that you speak of was held at the office of the then City Attorney?

A. Yes sir.

Q. The matter of regulating rates had been under discussion for months before that time, hadn't it?

1740 A. Yes sir, for years I might say. Of course some of the Aldermen that acted on this matter had just been in one year at that time.

Q. There were numerous meetings and consultations were there not leading up to the fixing of these rates between the Chairman and different members of the Board of Mayor and Aldermen?

A. I cannot say that there were; it was the only meeting that I attended, was that one, that is between the city attorney and the Committee or Aldermen.

Q. The matter was in Mr. Birdsong's hands, chiefly?

A. Yes sir, he collected the data upon which we acted.

Q. You don't know what consultations he had with other members of the Board?

A. No sir I do not.

Q. At the time of this particular consultation, the ordinance had not been prepared, had it?

A. No sir.

Q. The ordinance in question, in substantially the same form, was passed about three times by the City Council, wasn't it?

A. It was.

Q. The matter was under discussion during all of that period, wasn't it?

A. It was.

Q. Did not the attorney of the Water Company and some of it- *its* officials appear before the Water Committee or the Board of Mayor and Aldermen from time to time and discuss the matter?

A. The attorney for the Water Company was with us two or three times and Mr. Wheeler was with us once, or maybe it was twice; that is my best impression. That was in the former meetings of the Board that I refer to.

Q. After the ordinance had been twice passed, did not the Board suspend action in order to obtain information from the Com-
1741 pany upon the point suggested by Mr. Caldwell in his examination in chief?

A. I do not remember now at what stage it was suspended, but my best impression is that it was the first time it was passed that we suspended action and Mr. Wheeler came and then we invited Chas. T. Cates.

Q. They appeared, didn't they?

A. Yes sir.

Q. Then you speak of having written a letter asking for information?

A. Yes sir.

Q. And that was refused?

A. Well he answered the letter but he didn't give the facts that we could act on.

Q. He said substantially "it was none of your business" in that letter?

Mr. CALDWELL: We object to the question as the letter speaks for itself.

Sustained.

Q. Did you know of any other source from which you could have obtained that information except from the water company itself and itself and its officials?

A. No sir, only the information that we had gathered.

Redirect examination.

Q. You think Mr. Miller, that after one passage of this ordinance proceedings were suspended and inquiries then made of the Knoxville Water Company, or its officials for information?

A. I don't know whether it was the first or second passage, but at any rate it was before the final passage.

Q. Are you positive it was after the first passage?

A. It is my impression that it was some time while it was pending.

Q. Then does not that refresh your recollection sufficiently for you to state at this meting at Mr. Reuben Cates' office at which the ordinance was framed was held before any inquiries were made?

1742 A. Yes sir I think it was held before any inquiries were made; I stated that at first.

And further deponent saith not.

——— ———.

WALTER BELL, next witness called on behalf of the plaintiff, having been first duly sworn, deposed as follows:

Examination by Mr. CALDWELL:

Q. Mr. Bell, are you an Alderman of the city of Knoxville?

A. Yes sir.

Q. Were you an Alderman of the city of Knoxville on the 30th of March 1901?

A. Yes sir.

Q. Do you remember about that date an ordinance was passed by the Board of Mayor and Aldermen for the purpose of regulating the water rates of the Knoxville Water Company?

A. Yes sir.

Q. Did you make any investigations in fact yourself upon the subject of the reasonableness of that ordinance outside of the report of the Committee?

A. I did sir.

Q. What did you do?

A. I was Chairman of the Water Committee, I was then, but not at this time, and Mr. Birdsong had a stack of comparisons of statements, or little pamphlets from other cities, giving their rates, and we took the Water Company's rate here, and we compared the rate that we proposed to make with the rates of these other cities. We went over it very carefully and on one or two occasions, my recollection is Mr. Birdsong read those comparisons before the Board one night; I am not sure that he did but
1743 I think that he read the Knoxville rates and possibly Atlanta's and we went over that very carefully sir, privately, and in the Board one night we devoted very nearly the entire meeting night in going over the figures.

Q. Was that comparison of rates the basis upon which you formed your ordinance that was passed?

A. I think so sir.

Q. You joined with Mr. Birdsong in those investigations as I understand you?

A. Yes sir I neglected to state another thing; my recollection is that Mr. Heiskell wrote Mr. Birdsong a letter to get all the information necessary from the Water people, and my recollection is that we failed to procure that from Mr. Wheeler, either he declined to give it *o*t we didn't get it, according to my recollection. Mr. Birdsong called my attention to the fact and showed me Mr. Heiskell's letter and I don't know that he read the letter before the Board but my recollection is he did, I wouldn't say positively.

Q. Do you remember when Mr. Heiskell's letter was received by Mr. Birdsong whether before or after the comparison of rates had been read to and discussed in the City Council?

A. I think it was after my investigation with Mr. Birdsong.

Q. Was it after the ordinance had been framed?

A. I don't remember whether it was or not Mr. Caldwell.

Cross-examination by Mr. PICKLE.

Q. At any rate Mr. Bell the Mayor of the City at some time before this ordinance was passed, addressed a letter to the Chairman of the Water Committee, Mr. Birdsong?

A. Yes sir.

Q. Directing him to ascertain these facts from the Water Company before the final action?

A. Yes sir I am quite sure it was a long time before.

1744 Q. And do you remember that an effort was made by Mr. Birdsong to get that information from the Water Company but failed?

A. Yes sir.

Q. And after that failure the Board then proceeded to pass the ordinance?

A. Yes sir my recollection is that we held back the proceedings for a while, possibly a meeting or so, in order to get this information from Mr. Wheeler or the Water Company.

Q. The Mayor of the City called a halt on the passage of the ordinance until that information could be secured?

A. Yes sir, I am pretty sure that is a fact.

Q. Mr. Birdsong spent a very considerable time, did he not, in getting up data?

A. Yes sir, and I would state that Mr. Birdsong used to come to my place of business and consult me, and show me what he had done, and what he was going to do, he always consulted me as a member of the water committee.

Q. He as chairman of that Committee was the active member in obtaining information?

A. Yes sir.

Q. And he conducted the correspondence?

A. Yes sir.

Q. But kept in touch and consultation with the members of the Committee?

A. Yes sir.

Redirect examination by Mr. CALDWELL:

Q. Who were the other members of that water committee in 1901?

A. There was only one other member—only three of *is*.

Q. You and Mr. Birdsong and who else?

A. I was trying to think.

Q. Was it Connor?

A. Possibly it was Connor, sir, but when McTeer came in he changed me to another Committee and Connor dropped out, and of course I haven't been active with the Water Committee since.

Adjourned until 9.30 o'clock Feb'y 11th, 1903.

1745 FEBRUARY 11TH, 1903—9.30 o'clock a. m.

The further taking of Depositions in this cause was adjourned until Tuesday March 31st, 1903, at 2 o'clock P. M.

TUESDAY, *March 31st*, 1903—2 o'clock p. m.

Court met pursuant to adjournment;

Present: Special Commissioner Henry O. Ewing, and Joshua W. Caldwell and Charles T. Cates, representing the Complainant. Hon. G. W. Pickle, Counsel for the Defendant was notified, being called by telephone of the session of the meeting.

Thereupon Hon. J. W. Caldwell announced in open Court that the plaintiff had no further proof to introduce in chief and that the plaintiff consequently rested its case in chief and was ready to hear and participate in any proof that the defendant might offer at as convenient and early a date as might be fixed.

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1747 In the United States Court at Knoxville, Tennessee. In Equity.

#1260.

KNOXVILLE WATER COMPANY
vs.
THE MAYOR AND ALDERMEN OF THE CITY OF KNOXVILLE.

Depositions Taken Before H. O. Ewing, Special Master, at the Federal Court Room, in Knoxville, on the 21st Day of July, 1903, to be Used and Read on Behalf of the Defendant on the Hearing of this Cause Before the Special Master and the Court.

Present: Counsel for both parties.

CHARLES DUCLOUX, first witness introduced on behalf of the defendant, having been duly sworn, deposed as follows:—

Examination by General PICKLE:

Counsel for plaintiff asked leave of the Court that Mr. F. C. Kimball, Superintendent of the Knoxville Water Company be permitted to remain in the room during the taking of the testimony

1041

in the place and stead of Mr. William Wheeler, President of the Knoxville Water Company, to which objection was made by counsel for defendant, whereupon the Special Master ruled that Mr. Kimball could not be permitted to remain in the room during the taking of the testimony in the place and stead of Mr. Wheeler, on the ground that counsel for plaintiff at the commencement of the hearing of this cause had elected Mr. Wheeler as the official of the Company to remain in the room, and as the representative of the Water
1748 Company while the proof was being taken.

Q. Mr. Ducloux, give your age, residence and occupation?

A. Sixty-seven years old, residence Knoxville, Tennessee, occupation bookkeeper and notary public.

Q. Were you in the employ and service of the Knoxville Brick Company at any time; if so during what period?

A. I was employed by them as bookkeeper about nine years; from September 1889 to June 1898.

Q. During that period state whether or not you made the entries upon the books of the Knoxville Brick Company, and if so whether they were correctly made?

A. I did. They are.

Q. Please file a statement from the books of the Knoxville Brick Company during that period showing all purchases of brick made by the Knoxville Water Company, to Wheeler & Parks and to William Wheeler, and also credits showing payments for same, as the same appears upon the books of the Knoxville Brick Company?

Counsel for plaintiff excepts to the question in so far as it asks for prices of material furnished to William Wheeler and Wheeler & Parks.

Overruled.

Exception taken, by counsel for plaintiff.

A. I have here a statement of all the contracts between the Knoxville Water Company and Wheeler & Parks, also between the Knoxville Brick Company and William Wheeler and between the Knoxville Brick Company and the Knoxville Water Company while I was in charge of the books, which is as follows:

Knoxville Brick Co., Manufacturers of Dry-pressed Square and Ornamental Brick and Common Building Brick.

Office 107 and 109 Empire Building.
Phones 367 New, 925 Old.
City Yard 505 Jacksboro St. Phone 388 New.
Terms Net cash. Interest after 30 days.

KNOXVILLE, TENN., *June 19th*, 1903.

Sold to Wheeler & Park, City.

1749

1894.					
July	7.	1700 vitrified	$12.00	$20.40	
Oct.	29.	9200 "	"	110.40	
"	"	18000 Hard	6.00	108.00	
Nov.	28.	12400 "	6.00	74.40	
Dec.	31.	14600 vitrified	11.00	160.60	
"	"	7040 Hard	5.50	38.72	
					$512.52

Credits.

1894.				
Oct.	31.	Allowance per M on 9200 vit		9.20
"	"	" 50c. per M. 18000 hard		9.00
"	"	" for refused brick		39.17
Nov.	9.	Cash		181.43
Dec.	15.	"		68.20
"	"	Allowance 50c. per M. on 12400 hard		6.20
1895.				
Jan.	12.	Cash		199.32
				$512.52

Sold to William Wheeler, City.

1895.					
Jan.	30.	17400 vitrified	$11.	$191.40	
"	31.	20900 hard	5.50	114.95	
Feb.	28.	40800 "	5.50	224.50	
M'ch	14.	100 octagons	25.00	2.50	
"	30.	77300 hard	5.50	425.15	
Apr.	4.	200 octagons	25.00	5.00	
"	24.	300 "	"	7.50	
"	30.	44600 hard	5.50	245.30	
May	17.	2100 "	5.50	11.55	
"	22.	3000 "	"	16.50	
"	"	200 pressed (#2)	14.00	2.80	
1750					
May	30.	5000 hard	5.50	27.50	
June	7.	150 octagon	25.00	3.75	
July	31.	7150 hard	5.50	39.33	
Aug.	30.	36200 "	5.50	199.10	
Sep.	30.	7700 "	5.50	42.35	
					$1559.08

Credits.

1895.				
Feb.	25.	Cash	$306.35	
M'ch	23.	"	224.40	
Apr.	10.	"	125.00	
"	13.	"	302.65	
May	13.	"	257.80	
June	1.	"	58.35	
Aug.	8.	"	43.08	
Sep.	9.	"	199.10	
Oct.	26.	"	42.35	
				$1559.08

Sold to Knoxville Water Company.

1895.					
Jan.	4.	500 Salmon	$5.00	$2.50	
"	15.	1000 "	5.00	5.00	
1896.					
M'ch	17.	1000 hard		5.50	
"	21.	1000 "		5.50	
Apr.	18.	1000 "		5.50	
June	17.	1500 # 2 pressed	$14.00	21.00	
Sep.	30.	50 vit. corners	15.00	.75	
1898.					
May	9.	200 hard at $6.00, plus 20c. drayage		1.40	
					$47.15

Credits.

1895.				
Feb.	12.	Cash	$7.50	
1751				
1896.				
Apr.	10.	Cash	11.00	
May	6.	"	5.50	
Aug.	10.	"	21.00	
Oct.	15.	"	.75	
1898.				
June	10.	"	1.40	
				$47.15

Q. State whether or not the prices of brick as charged in said statement are the prices delivered on the ground?

A. They were, to the best of my recollection.

Cross-examination by J. W. CALDWELL:

Q. Mr. Ducloux, do you know what these brick were worth in the year 1901, say in March 1901?

A. What they were worth?

Q. Yes sir, what were they worth per thousand?

A. What kind of brick?

Q. These same classes of brick here, vitrified and hard brick?

A. I don't remember.

Q. Were they worth more or less than they were between the years 1889 to 1898?

A. In retailing to the general public, I should think they were worth from fifty cents to one dollar more.

Q. Are you still working for the Brick Company?

A. No sir, I hav-n't been working for them since 1898.

Q. But you think that in March 1901 they were worth from fifty cents to one dollar more than shown in this statement?

A. Yes sir, at retail.

Mr. CALDWELL: Without waiving our examination of succeeding years at a time later than the year 1901 I shall ask the same question in referring to the year 1902.

1752 Q. Mr. Ducloux please state what these bricks would have been worth in the year 1902?

A. In the year 1902?

Q. Yes sir?

A. I have no idea at all.

Q. You don't know whether they were worth then more or less than in this period?

A. No sir I don't; I don't know the present prices of brick, and don't have anything to do with the brick business now. At the time the brick were sold they — worth from fifty cents to one dollar more at retail than the prices we obtained from the Water Company. The retail price here in the city was fifty cents per thousand more on common brick and one dollar more for vitrified brick than the prices we charged the Water Company. I meant to say awhile ago that the bricks were worth fifty cents per thousand more for common brick and one dollar per thousand more for vitrified brick to the retail trade in Knoxville than the prices we charged at the time I was in charge of the books, but after I left in 1898 the employment of the Company, I have had nothing to do with the brick business and don't know what the prices were in the year 1901, and so I wouldn't make any statement as to the prices of brick.

SPECIAL MASTER: The witness did not intend to fix the price of brick for the year 1901, as compared with the prices of these purchases, because he was then out of the brick business and says he don't know what the prices were in 1901, and his former answer was made under a misapprehension, believing that the question asked him by counsel for the plaintiff referred to the year 1891 instead of 1901.

Redirect examination by Gen. PICKLE:

Q. Mr. Ducloux what do you mean by the retail trade?

1753 A. Well furnishing brick by a few thousand, or by the wagon load. Here, we had a contract to furnish a larger amount. There is a difference between the price of brick delivered by the car load and the wagon load.

Q. State whether or not you sold to other parties buying like

quantities of brick as the Knoxville Water Company at the prices you sold to the Knoxville Water Company practically?

A. With vitrified brick, we had a very small trade in them; the Water Company bought more vitrified brick than anybody else.

Q. What I mean to ask you is that in larger quantities you sold at wholesale prices, being a different price than what you sold at retail prices, in smaller quantities?

A. Yes sir.

Q. And you treated the sales made to the Knoxville Water Company as at wholesale prices and not as at retail prices?

A. Yes sir.

Recross-examination:

Q. How many bricks will an ordinary wagon carry at a load?

A. I don't remember; 500 or 600 bricks; I cannot tell exactly.

Q. It is about 500 or 600 bricks?

A. Yes sir, about that; some wagons hold more than others; we didn't sell them by the wagon load but by the thousand.

And further deponent saith not.

——— ———.

1754 S. G. HEISKELL, next witness, called on behalf of the Defendant, having been first duly sworn, testified as follows:

Examination by Mr. PICKLE:

Q. Give your age residence and occupation?

A. Forty-four years past, Knoxville, Tennessee, Attorney at Law.

Q. How long have you resided in Knoxville, Tennessee?

A. Since Christmas Day, 1861.

Q. Have you at any time held office under the City government of Knoxville, and if so, what office or offices, and at what dates and during what periods?

A. Yes sir, I have held some positions under the City. I was an alderman in 1882, filled out the unexpired term of Captain Ledgerwood as City Attorney the same year, and was City attorney for the year 1884, was Mayor 1896 to 1898, and Mayor from the year 1900 to the year 1902.

Q. How long were you alderman, and from what date to what date in 1882?

A. I was alderman the entire year.

Q. State whether or not it was during that period that the contract was made with the Knoxville Water Company for the construction of the water plant, and whether or not during that period it was partially constructed?

A. Yes, sir, the contract was made and signed, my recollection is, July 2nd 1882, and they began work that year. I may be mistaken in the date of July, but I think that is correct. I was an alderman at the time.

Q. I notice in the contract of July 1882 between the Knoxville Water Company and the Mayor & Aldermen of the City of Knox-

ville that the plan under which the Water Company contracted to build was known as the "Moses Lane plan" I will ask you
1755 by whom was that plan made?

A. By Moses Lane.

Q. Under whose employment and by whom was it paid for?

A. The Moses Lane plan was in existence, as a fact, when the City Council of 1882 came into office. The plan had been gotten up the preceding year, as I remember it, by Moses Lane in the employment of the preceding Council. It was not, I know, gotten up by the City Council of which I was a member. My recollection is it was the city council preceding that, of 1881, possibly 1880; either 1880 or 1881.

Q. It was a plan then, as I understand you, made by Moses Lane under employment of the City, and was in existenece at the time the contract of July 1882 was made, and as stated here, was the basis of that contract?

A. That is correct.

Q. I will ask you whether or not Mr. Heiskell there was any trouble grew out of this, between the City and the Water Company with reference to the execution of that contract in the construction of the water works?

A. There was a law-suit that came up subsequently to the execution of the contract which involved the question as to what the "Moses Lane plan" was, and that law-suit was tried in the Chancery Court at Knoxville and it went to the Supreme Court. The City claimed that the Moses Lane plan was not executed by the Water Company, and the Water Company claimed that it was. That was the issue involved virtually in the law-suit.

Q. Was the matter before the City Council during the time you were in office?

A. No sir, it came up subsequently.

Q. I mean was the matter brought before the Council for discussion during the time you were in office as to whether it was being executed properly by the Water Company?

A. I don't think it was as to what the Moses Lane plan
1756 was; there was a difference between the City and the Water Company while I was alderman, but the specific question as to what the Moses Lane plan was wasn't up, because the contract called for the "Moses Lane Plan" and it was assumed that there was no question as to what that plan was, and the question of what the Moses Lane plan was was subsequently.

Q. What became of the original Moses Lane plan?

A. That is a question that nobody can answer. I can tell you what was understood to have become of it, generally.

Q. Was it lost or stolen?

A. It was understood to have been lost or stolen.

Q. State whether or not the insistence on the part of the City that larger mains should be placed on the principal streets of the City were being placed by the Water Company, and that the Moses Lane plan required larger mains?

A. The Moses Lane plan, as I understood the matter, called for a

larger plan, generally speaking, than the plan that was actually executed to the Knoxville Water Company, which was what was then called the "McDonough plan."

Q. Well you have spoken of what was called the "McDonough plan" as contra-distinguished from the Moses Lane Plan; what was the difference between those plans as you understood them?

A. One was a smaller plan than the other—smaller pipes—and a smaller plan generally is the way I understood it.

Q. Was it during your period and service that bids were received on the McDonough plan, and if so, at what prices?

A. I think not. There were no bids, as I remember, received at all to build the plant for the City. The question before the council that I was in was as to whom they should award the contract to *to* build the water works under the franchise from the City.

Q. Who superintended the building of the plan-?

1757 A. I think his name was Loweree, is my recollection. I knew the man very well at the time and I think his name was Loweree. It has been twenty years ago.

Q. Was it F. M. Loweree?

A. I don't remember his initials.

Q. Did he have control apparently of the construction work of the plant here?

A. I so understood it.

Q. Did you see Mr. Loweree frequently during the period of construction?

A. Yes sir.

Q. What were the habits and conduct of Mr. Loweree——

A. Well with regard to his temperance or intemperance, Loweree drank a great deal of whiskey, a good deal of it, and was known to be that kind of a man.

Q. Well state whether or not during the period he was incapacitated from doing business from intoxication?

A. That was my impression and understanding at the time; I have seen him when he was full.

Q. Who was the engineer that had supervision of the work of original construction, Mr. Heiskell?

A. On the part of the City?

Q. Well on the part of the Water Company and City too, but on the part of the Water Company, I am asking about?

A. There was a young fellow who was a son-in-law, or subsequently married Colonel Lockett's daughter. Colonel Lockett was a Professor of Mathematics in the University, and this young fellow had taken an engineering course at the University, and my recollection is that he was the man the City had—I have forgotten his name; if you could mention it, maybe I would recall it.

Q. I will ask you whether or not he was the man that the Water Company had?

A. I don't remember.

Q. Was his name Fuller?

A. Fuller is the man—that was the man.

Q. You don't remember whether he was the man the
1758 Water Company had supervising the work?
A. I don't remember.
Q. Do you know of them having any other engineer in charge of the work except Fuller?
A. I don't recall that.
Q. What was the age of Mr. Fuller and how long had he been in the engineering business?
A. Mr. Fuller was quite young; he had just gotten out of the University, having been a pupil under Col. Lockett. I should guess the fellow was 25 or 26 years of age.
Q. Had he, up to that time, had any experience in water works engineering?
A. I don't think he had had experience in any kind of engineering that amounted to anything; he was too fresh from the University to have had much.
Q. During your term of Mayor in 1896, was there any controversy between the City and the Water Company?
A. Yes sir.
Q. What was it during that time—in 1896 I am speaking of?
A. I was mistaken in my last answer. It was during my last term of office that there was a controversy arose between the City and the Water Company.
Q. How long was your term as Mayor?
A. Two years each.
Q. When were you Mayor the last time; during what period?
A. 1900-1902, commencing January 23rd; January 23rd 1900 to January 23rd, 1902.
Q. Was there a controversy during your last term as Mayor between the Water Company and the City?
A. Yes sir.
Q. Over what question, Mr. Heiskell?
A. The regulation of rates.
Q. Was the ordinance in question in this case passed during your term as Mayor?
A. Yes sir.
1759 Q. Had there been a discussion of the question of regulating the rates of the Water Company prior to your coming into office in 1900?
A. I can't say, as Capt. Rule's administration was the one preceding mine. The question was discussed when I was Mayor the last time, before the ordinance was passed.
Q. Do you remember what date, the first ordinance, undertaking to regulate the rates of the Water Company, was passed under your administration?
A. I think it was in the Spring of 1900, is my recollection.
Q. Are you able to fix the date specifically?
A. No sir.
Q. To refresh your recollection, I will ask you if it wasn't in the latter part of July 1900?
A. That it finally passed?

Q. Yes sir.

A. I couldn't state positively about that; I really don't remember the date.

Q. Well whatever the date at which that first ordinance was passed, I will ask you to state whether or not the matter was investigated and gone over, and information sought by the City officials from the Water Company touching the matters that were essential for the City Council to know in the regulation of rates?

A. Yes sir.

Q. Do you remember addressing a letter to the Chairman of the Water Committee, Mr. Birdsong in regard to that matter?

A. Yes sir I remember it.

Q. I will ask you to examine the copy of a letter, purporting to be dated July 16th, 1900, and purporting to be addressed by you to Messrs. A. S. Birdsong, J. J. Conner and G. B. Davis, Water Committee, and signed by yourself as Mayor, and state whether or not that is a correct copy of the letter you addressed to the Water Committee on that date, said letter being Exhibit #3 to the
1760 Answer in this case?

A. Yes sir, that is a correct copy.

Q. Was the letter written at the date that it bears there?

A. Yes sir.

Q. Was the ordinance first passed then pending before the City Council and subsequently passed?

A. Yes sir, I so remember it.

Q. Why did you write that letter Mr. Heiskell?

A. I wrote the letter for the reasons that it states on its face. The regulation of rates, in a matter of this sort, is held by the courts, must be reasonable, and the question of the reasonableness of rates depends upon a number of circumstances, among them, as this letter states, being the amount of money invested by the company in its plant, the income it derives from its plant, and the books of the Water Company being their own property, and they making no public statements as to their income, or the valuation of their plant, it was necessary, if we could, to get some information upon those points, so as to know whether or not our ordinance would be a reasonable ordinance to impose upon them under the circumstances. I think the letter itself gives the reasons why it was written as clearly as I can give them.

Q. Do you know whether or not Mr. Birdsong in compliance with that letter, addressed a letter to the water Company?

A. I do not of my own knowledge. I know that the Water Company answered the letter, so I take it that Birdsong sent them a copy of it.

Q. State whether or not the ordinance was held up and not passed until after the Water Company had responded to this letter?

A. Yes, it was held up, and not only that, but my recol-
1761 lection now is that we gave a hearing to Mr. Cates, the Attorney of the Water Company, and I think to Mr. Wheeler, before it was passed. I know Mr. Cates appeared at an informal meeting of the Aldermen that I called together for the purpose of

giving the Water Company a hearing—I think he appeared twice. I am certain that he appeared once.

Q. Who was present at the informal meeting or meetings, I mean of the City officials?

A. Why most of the aldermen were there. Mr. Cates made a speech and set up his side of the controversy, which was exactly what we wanted to be done, because we wanted the Water Company to have a hearing, and we gave them a hearing.

Q. I will ask you to state whether or not the Water Company was denied any hearing that it desired?

A. None that I ever heard of.

Q. I will ask you to state whether or not it was invited, through its officials, to give the information requested?

A. It was.

Q. On the occasion that you speak of Mr. Cates being present and making a speech, state whether or not he went extensively into the matter?

A. My recollection is that he did, except as to the question of income; I don't think he touched that question.

Q. State whether or not questions were propounded by yourself or by the aldermen to elicit information during that hearing?

A. My recollection is that Mr. Cates made a speech, and then questions were asked him by various aldermen.

Q. And this occurred before the passage of that ordinance?

A. Yes sir.

Q. Well now, what became of that first ordinance?

A. It was passed and approved.

Q. Did any litigation arise under it?

A. Yes sir.

Q. What was the result of that litigation?

1762 A. There was a clerical defect in the ordinance. My recollection is that the defect was the omission of two words "per annum" in the stating of the rates, and it was abandoned and a new ordinance passed inserting those words, and the new ordinance is the ordinance that the Supreme Court of this State and the United States declared to be valid.

Q. Was there any change between the first ordinance passed and the second ordinance, except the insertion of the words "per annum."

A. None; they were identically the same excepting those two words.

Q. And what was the occasion of re-enacting the ordinance?

A. On account of the omission of those two words in the ordinance.

Q. Do you remember the date of the last ordinance?

A. Do you mean its final passage?

Q. Yes sir.

A. No, I do not.

Q. Now I will ask you whether or not during the period that these ordinances were pending, and during the entire period from the introduction of the first until the passage of the ordinance in question, the matter of the regulation of rates was under discussion

among the people here in Knoxville, and in the newspapers in the City?

A. Yes sir, it was discussed very extensively among the people of Knoxville. It had become a public question before the City Council.

Q. State whether or not the proceedings at these various meetings of the Council were published in the newspapers?

A. Yes sir.

Q. At the hearing that you speak of, do you remember whether or not Mr. Kimball was present at one or more of them?

A. Yes sir, I remember that once Mr. Kimball was there,
1763 because on one occasion, my recollection is, he gave us the number of water subscribers he had; I don't remember what the number was, but he gave the number.

Q. Was that information elicited by questions?

A. I don't remember whether anybody asked him or not, but he gave it. I suppose some question must have been asked.

Q. Do you remember what the number was?

A. No sir, I do not.

Q. Well between the passage of the first and second ordinances about October 1900, I will ask you whether Mr. Wheeler and Mr. Cates had a hearing before a meeting of the City Council, or an informal meeting?

A. Mr. Wheeler had a hearing and I have been trying to think while sitting here whether it was during the pendency of the first ordinance or the second ordinance, but I know he had a hearing himself, because while he was here on a visit, I went up to Morristown on the same train that he went off on, and I know that he invited me to come back into the sleeper with him, and we went, and sat there and talked the weather and other things until I got off the train. Now whether that was during the pendency of the first or second ordinance, I do not know. I know he had a hearing, and that I talked with him on the cars.

Q. And it was on this occasion that you left the city with him that he had been here and had had a hearing?

A. Yes sir, the same one.

Q. Mr. Heiskell, did your term of Mayor extend over the period of this litigation and until its termination in the Supreme Court of the State—over this ordinance of March 30th 1901?

A. Yes sir.

Q. State whether or not there was any consent or agreement on your part with any one to abandon or pretermit any of the issues in that case in any of the courts?

A. No sir.

1764 Q. State whether or not, you as Mayor had charge of that litigation for the City?

A. Yes sir.

Objected to by counsel for Complainant as that is a question of law rather than of fact.

COMMISSIONER: I think it would be a question of fact whether he made any agreement.

Mr. CALDWELL: It was simply the last question that I referred to.

Q. About what reduction in rates was made in the ordinance of March 30th 1901? What per cent. of reduction in rates was made?

A. The reduction varied for the different classes of water service. In some of the classes of service, there was no reduction whatever, and we allowed to stand as they were.

Q. Now I will ask you if in your opinion the gross receipts of the Water Company, at the reduced rates prescribed by the ordinance of March 30th 1901, will yield as much revenue in the aggregate to the Water Company, as the enforcement of the old rates of the company before they were reduced, and state your reasons for any conclusion you may reach upon that subject?

A. Well I can only answer that by telling how I came to approve the ordinance, and upon what basis. We were unable to find out from the Water Company just what their gross income was and on that account, we had to get at it the best way we could. From all the information I could gather at the time, I concluded in my own mind, that the Knoxville Water Company was receiving from the people of Knoxville about $80,000.00 per annum. Since the ordinance was passed, testimony has been given, as I understand it in this case, which fixes the income of the Water Company at about $100,000.00 (per annum), so that if the per cent. of reduction by the ordinance was taken from $100,000.00, it would still exceed $80,000.00, the basis we estimated the income to be at the time.

1765 Q. Well now, what in your opinion would be the effect upon the amount of water consumed by the reduction of the rates to the basis of the City ordinance; would there be more or less water consumed in your opinion?

A. I think there would be more water consumed, because the cheaper water is, the more generally it would be consumed.

Q. Well, in your opinion would a reduction in the rates be compensatory to an increase in consumption?

A. I think there would be an increase in consumption and an increase therefore in revenue, and there is not a doubt in my mind but that the income of the Water Company would be greater than the $80,000.00 that we estimated it to be at the time the ordinance was passed.

Counsel for plaintiff excepts to questions calling for the opinion of the witness as in the last question and answer.

COMMISSIONER: The Master is unable to draw the line as to what would be an opinion.

Cross-examination by Mr. CALDWELL:

Q. Mr. Heiskell, you referred a while ago to certain facts having been developed in the testimony in this case. I take it you have not read the testimony?

A. I have read it in part.

Q. What parts of it have you read?

A. I have read the parts relating to Franchise Account, or the money spent by the Water Company upon its franchise account,

and have heard stated quite a lot of the other parts of the testimony.

Q. From General Pickle, counsel in the case?

A. Yes sir.

1766 Mr. CALDWELL: We object to the witness testifying from something he has read.

COMMISSIONER: I over-rule the exception.

Exception taken by Counsel for Complainant.

Q. Mr. Heiskell, you speak of the construction of the Water plant. I assume that you have no personal knowledge whether it was built upon the Moses Lane or the McDonough plan?

A. Mr. Caldwell, at one meeting of the City Council in 1882 by some means or other the question of the Moses Lane plan and the McDonough plan came up. Some Alderman then said that the Moses Lane plan and the McDonough plan was one and the same thing, was the first that I ever heard of any difference between the two, and that alderman who was an advocate of the Knoxville Water Company said that the Knoxville Water Company had bid upon the McDonough plan, and that is the best I can answer your question.

Q. Your information then is based upon that statement and not upon your personal knowledge of the fact?

A. Yes sir. I will state in addition to that Mr. Caldwell, that the statement was controverted right there on the floor of the Council, and what the end of the controversy was, I don't remember beyond the fact that it was built according to the McDonough plan. I know the statement was controverted by somebody there present.

Q. Isn't it a fact that at the time the Water Works were about to be built, the Company represented by Loweree and another company were rival bidders for the franchise?

A. Yes sir. I really think there were three bidders. I know there were two, and my recollection is there were three.

Q. The Knoxville Water Company's bid was the lowest wasn't it?

A. It was the lowest, my recollection is, so far as the price of plugs were concerned. I don't remember whether it was the lowest so far as furnishing water to the citizens or not. The
1767 City Council was primarily interested of course in getting the lowest rates it could for water plugs for fire protection, and this Company's bid I know was the lowest in that respect.

Q. Was one of the rival companies represented by Mr. John S. Van Gilder?

A. Yes sir and other local citizens. There were quite a number of them.

Q. Now it is a fact, is it not, that Mr. Van Gilder and his associates displayed a great deal of feeling on the subject of awarding the contract to the other company?

A. Well I can't say as to that. I know that Col. Van Gilder subsequently was an opponent to the Water Company, but I don't remember of any feeling being displayed.

Q. Do you recollect whether he actively antagonized the Water Company from that time forward?

A. Well the Colonel was recognized as an opponent of the Water Company.

Q. But you can't say whether that feeling was manifested at that time, and had its origin from that time?

A. I don't recall that.

Q. He was pretty actively antagonistic to the Water Company after that time, wasn't he?

A. Yes sir and a good many other people were.

Q. Was Mr. Fuller the City Engineer at that time?

A. Yes sir.

Q. Mr. Heiskell, before the present works were built, the City had bought the reservoir site, and owned it, didn't it?

A. Well on information I will say yes. It was done before I was alderman, but it was common knowledge here that the City had bought it.

Q. It was a part of the contract that the Water Company should build its reservoir where it is built?

A. I so understood it.

1768 Q. And the pumping station was also to be built where it now stands?

A. I so understand it.

Q. And the Water Company took off the hands of the City the different pieces of real estate that the City had bought in contemplation of building water works for itself?

A. I so understood it.

Q. In regard to the litigation that you mentioned awhile ago between the City and the Water Company, which went from the Chancery Court to the Supreme Court, isn't it a fact that the principal point in controversy there was whether or not the plant had actually beeb built on the Moses Lane plan, and wasn't it decided by the Supreme Court, in which it affirmed the Chancery Court that it had been built on the Moses Lane plan?

A. The point in controversy was, whether the plant had been built on the Moses Lane plan or the McDonough plan, and it was decided by the court that it was built upon the McDonough plan. I think that the insistence of the Water Company there was, just as this alderman I have mentioned, insisted on the floor of the council, that the Moses Lane plan and McDonough plan were one and the same thing.

Q. The Water Company gained that suit?

A. The Water Company gained the suit.

COMMISSIONER: The City was unable to show that the contract had been violated?

A. Substantially so, yes sir.

Q. Coming down to the year 1900, the ordinance that was adpoted in that year by the City Council was prepared by a committee of which Mr. Birdsong was Chairman, wasn't it?

A. Mr. Caldwell, the rates were agreed upon between Mr. Birdsong and myself over in my office, and I take it that he submitted

those rates to his committee. At any rate the ordinance
1769 was reported to the Council as coming from the committee.
Birdsong and myself fixed the rates over there, and I think I have a little book somewhere that had the memoranda on it.

Q. Those rates that you and Mr. Birdsong agreed on, were not the same rates that were in the first draft of the ordinance as passed at its first reading, were they?

A. Yes sir, they were. The rates were never changed between the two ordinances at all, and the only difference between the two ordinances was the word- "per annum."

Q. I mean were the rates that you and Mr. Birdsong agreed upon were not the rates that were first put into that ordinance; in other words, didn't you and Mr. Birdsong change the rates in the ordinance from what it was when originally introduced in the council and were not the rates set out in exact accord in the ordinance that had previously been presented to the City Council by Jesse L. Rogers?

A. No sir, not that I know of.

Q. Were they in that ordinance at its first reading?

A. Yes sir, the rates were never changed to my recollection.

Q. Was your letter, which is Exhibit #3 to the Answer in this cause written before or after the first passage of the ordinance?

A. I think Mr. Caldwell it was written after the passage of the ordinance upon its first or second reading and before it was finally passed upon its third reading.

Q. It was after its second reading?

A. Possibly so.

Q. The hearing given Mr. Cates was also after its second reading wasn't it?

A. Possibly so; the ordinance wasn't of course effective until its third reading, and they were given every opportunity before it passed its third reading.

Q. You have stated that Mr. Cates didn't state what the income of the Water Company was; he did state, however, that
1770 it would be insufficient under the ordinance proposed to pay the operating expenses of the company and the fixed charges?

A. Mr. Cates made a pretty strong statement upon that subject, but the exact details of it, I don't remember. He put it in the best way he could for the Water Company.

Q. Isn't that a part of your recollection as to what he stated about it?

A. The details I wouldn't attempt to repeat, but he did claim that the reduction was too much, and that his company couldn't stand it; but just what the details were, I wouldn't undertake to state, for I don't remember all of them.

Q. Referring to the appearance of Mr. William Wheeler before the Council; didn't that occur during the time that the first litigation over rates was going on—the litigation over the first ordinance that had the words "per annum" omitted from it?

A. I cannot remember. As I stated to General Pickle, I cannot fix the date when Mr. Wheeler was there.

Q. And you don't remember what the occasion was that took you to Morristown?

A. No sir I don't remember that.

Q. Wasn't it while the litigation was pending over the first ordinance, and there was an effort being made to compromise the litigation?

A. Well sir I can't remember; it might have been that way.

Q. Have you a copy of the message to the City Council at the time you approved the rates ordinance?

A. No, I think not.

Q. I will hand you a copy of it along with the copy of the ordinance as typewritten, and if it is correct, I will ask you to file it as Exhibit "1" to your deposition?

A. The message appears to be a correct copy as well as I can answer from memory, not having the original before me.

1771 Redirect examination:

Q. Mr. Heiskell, you have been asked if it was after the second reading of the ordinance that the hearing was given to the Water Company. I will ask you what the practice of legislative bodies and especially the city council is, whether the hearing and discussion of a measure is upon the first or second reading, or how?

A. It is after the second reading, both in the legislature and city council here.

Q. Is that the practice universally?

A. It is in Tennessee. I was chairman of the Judiciary Committee in the Tennessee Legislature, and I always gave a man a hearing after the second reading, and there was no one else but what did the same thing, and the same was true up here at the City Council.

Q. I will ask you whether or not there was perfect willingness on the part of yourself and City Council to give the Water Company further time, if they had shown a disposition to have given you the information that would have been of benefit to you in the fixing of these rates?

A. I thought we gave the Water Company not only an opportunity, but a liberal opportunity. We wanted all the information we could get from them or anybody else.

Q. Did they ask for any further hearing?

A. I don't think they did; I have no recollection of it.

Q. You state that Mr. Cates appeared before the City Council at its meetings and made strenuous claims on the part of the Water Company. I will ask you if one of the claims he made was that the City had no right to regulate rates?

A. My recollection is that one of his strongest arguments was that we couldn't regulate the rates at all, being bound by the contract we had already made.

1772 Q. I believe you stated they refused to give you the amount of their gross income?

A. They did.

Q. And the other facts inquired about in the letter of Mr. Birdsong?

A. Yes sir.

Q. In regard to the litigation between the city over the construction of the plant, I will ask you if the Moses Lane plan had not disappeared before that litigation came up?

A. Yes sir, it got out of pocket some way; it was thought to have been stolen.

Q. The 6th Section of Article "1" of the contract between the City and the Water Company, reads as follows: "And said Company hereby agrees to furnish from said city the property already acquired by the city for the purpose of erecting a Water Works, including lands, plans, specifications, drawings, maps &c. &c. and to pay therefor within thirty days from the execution of this agreement and before the construction of said works the sum of $7800.00." I will ask you what plans, lands, specifications drawings, maps &c. are therein referred to?

A. The Moses Lane plan.

Q. Mr. Heiskell you stated that you and Mr. Birdson drafted the original ordinance in substantially the form that it was finally passed, excepting the word "per annum" which was inserted on the second enactment. Now I will ask you whether or not you had accumulated a quantity of information before that time by correspondence and otherwise as to the reasonableness of water rates?

A. Yes sir, we had reports from, I would say, twenty cities. Quite a number at any rate—I would say probably 20 cities; in addition to that, I did the best I could to get the information about the expense of running this plant. For example, I tried to get the force that was employed by the Water Company at the Pump
1773 Station, and the amount of coal that was used there, and the office force and the street force used in laying pipe.

Q. Had several weeks or months been expended in gathering this information before action was taken?

A. The agitation of this question in my administration began very soon after we came into office and continued right along until the passage of the ordinance.

Q. And during the time you were making every effort to gain information?

A. Yes sir, the best we could. I remember one fact distinctly that when I was trying to find out the amount of coal that was used over there, I got hold of Col. T. H. Heald who seemed to have information upon the subject, and got from him a statement of what the coal used there was. I give that as one item in the investigation. I got from others, the number of men employed at the pump station, and from other people the office force, &c.

Q. All these things with others, were taken into account when you were settling the matter of rates?

A. Yes sir. I will say also that Birdsong knew substantially what I knew. He was digging into it himself.

Recross examination by Mr. CALDWELL:

Q. You say the Company refused to give you the amount of its gross income, and that the refusal is contained in Exhibit #7 to the Answer in this cause, isn't it?

A. Yes sir, it is contained in that letter. It is also contained in the fact that Mr. Cates did not state in any of his communications to us what their gross income was; that Mr. Wheeler, when he was before the aldermen did not state what the gross income was, and that when I went up on the train with Mr. Wheeler in the
1774 sleeper-car, we discussed the water question there again, and he never stated what the gross income was.

Q. From whom did you get the information as to the number of men employed over there?

A. I don't remember; I got it I think from two different men. I don't remember who they were.

Q. Was any inquiry on that subject addressed to the Water Company?

A. No sir, it wasn't official.

——— ———.

The further taking of depositions was adjourned until 3 o'clock P. M.

1775 JULY 21ST (TUESDAY)—3 o'clock p. m.

Court met pursuant to adjournment.

A. S. BIRDSONG next witness called on behalf of the defendant, having been duly sworn, testified as follows:

Examination by G. W. PICKLE:

Q. Mr. Birdson, give your age, residence and occupation?

A. I am thirty-three years of age, residence Knoxville, Tennessee, occupation Insurance Agent.

Q. How long have you resided in Knoxville?

A. About fifteen years.

Q. What office or offices do you hold at the present time?

A. I am a member of the Legislature from Knox County and also an alderman from the 4th Ward of the City of Knoxville.

Q. How long have you served in the capacity of alderman of the city?

A. I am now serving my fourth year; second term.

Q. From what date does your aldermanic service begin?

A. January 1900.

Q. Have you, during the time you have been an alderman of the city, served on any committee?

A. Yes sir.

Q. Have you, during your entire service been a member of the Water Committee of the City Council, and Chairman of that Committee?

A. Yes sir, ever since I have been a member of the Council.

Q. As Chairman and a member of that Committee I will ask you

to state whether or not you found pending, when you came into office, any measure relating to Water rates, or the regulation of the Water rates of the City of Knoxville?

A. Yes sir.

1776 Q. What was the state and nature of that measure?

A. Of the ordinance?

Q. Yes sir.

A. An ordinance there had passed the first and second reading when we were sworn in.

Q. Was that an ordinance undertaking to regulate the water rates?

A. Yes sir, it was an ordinance regulating the rates of the Knoxville Water Company.

Q. Why didn't your committee take up that ordinance and pass it?

A. Why this matter was entirely new to us; we didn't know anything about it, and as chairman of the Water Committee, I suggested that we look into the matter and try and see what we were doing, and they agreed with me, and thereupon I began to make an investigation; I asked the Water Company for a Rate Book and also an Annual Statement. They gave me the Rate Book but not the Annual Statement; then I wrote the smaller and larger companies, private companies and companies owned by cities and compared their rates with the Knoxville rates, and compared also the sizes of these different towns with the city of Knoxville.

Q. How long were you engaged in these transactions before you undertook the preparation and introduction of an ordinance regulating rates?

A. Three or four months. We went in in January and we took the matter up right away, and I think I introduced my ordinance in June.

Q. Well did you perform much or little labor in the cause?

A. I performed a great deal of labor in the way of correspondence and making investigations seeking to obtain all the information relative to Water Companies that we could get that would give

1777 us some light on this subject, so that we might introduce a reasonable ordinance.

Q. About how many companies did you hear from, and what did you get from them?

A. Well we heard from twenty five or thirty towns; probably more.

Q. I will ask you to look at pages "16" and "17" of the Answer in this cause and state whether that is a correct summary of the information you received or substantially so?

A. Yes sir, I should say it was.

Q. State whether or not you made any effort to inform yourself in regard to the expenses of operating the plant here locally?

A. Yes sir, on the 16th of October, as well as I remember.

Q. Well now, I am speaking of the date before the introduction of the ordinance?

A. Oh yes sir, yes sir.

Q. Did you inquire into its value by the way of assessments for taxes?

A. Yes sir I looked up the assessments for ten years.

Q. Have you the information that you had before you, or a statement of it not, and if so, produce it, and insert it in your deposition?

A. Yes sir, I have it and it is as follows:—

Year.		Assessed value.	
1891	.....	$100,000.00	
1892	.....	125,000.00	..... North Knoxville, $15,000.00
1893	.....	100,000.00	..... " " 14,000.00
1894	.....	100,000.00	
1895	.....	136,000.00	
1896	.....	150,000.00	
1897	.....	160,000.00	
1898	.....	165,000.00	
1899	.....	165,000.00	
1900	.....	272,900.00	L. B. Plant included
1901	666	275,000.00	Real Estate, M'ch Res. Stand pipe mains and all personal property in City.

1778 Q. In what year did the North Knoxville Plant enter into the assessment of the property of the Knoxville Water Company?

A. In North Knoxville, I find a separate assessment of $15,000.00 in the year 1892. There was a general assessment of $125,000.00, but this item of $15,000.00 was not included in the $125,000.00 assessment of 1892.

Q. What about 1893, were they assessed separately or together?

A. I find in 1893 their assessment was $100,000.00; $14,000.00 was another item for North Knoxville. That is the way it shows on the tax books.

Q. Was there any separate assessment of North Knoxville after that date?

A. No sir there was none shown.

Q. When did the Lonsdale Beaumont Water Plant first enter into the assessment of the Knoxville Water Company's property?

A. In 1900 I think.

Q. What do the books show as included in that assessment?

A. It reads: "Real estate, machinery, reservoir standing-pipe, mains and all personal property in the City." That is the way the item read.

Q. Was this statement taken from the books of the Trustee's office?

A. It was taken from the books of the Trustee's office.

Q. Well, who prepared the ordinance that was first introduced?

A. The Water Committee, which consisted of myself, Mr. Davis and Mr. Connor.

Q. Did you go over the matter with the Mayor, Mr. Heiskell?

A. Later on we did—I did.

Q. Was that in the final draft of the ordinance?

A. Yes sir.
Q. Was that ordinance passed on the first and second reading with or without discussion?
1779 A. Without discussion.
Q. Is that the usual practice in your body?
A. Yes sir, up until the second reading, and then it is referred to the committee for their consideration?
Q. To what committee was this ordinance referred?
A. To the Water Committee.
Q. The committee of which you were chairman?
A. Yes sir.
Q. After it had been referred on its second reading to your committee, I will ask you whether or not the Mayor of the City addressed to you a letter which is made Exhibit "3" to the Answer in this cause, dated July 16th 1900, this being a copy of the letter?
A. Yes sir.
Q. I will ask you whether or not in compliance with the Mayor's request, you addressed to the Knoxville Water Company a letter, dated July 16th, 1900, a copy of which is made Exhibit "4" to the Answer, and whether that is a correct copy of your letter?
A. Yes sir, I should say it was.
Q. Did you receive an answer to that letter?
A. Yes sir.
Q. Did Mr. Kimball, the General Manager here, acknowledge the receipt of your letter?
A. I think he did, and stated that it had been forwarded to Boston, is my impression now, or Mr. Cates told me that.
Q. Now what occurred after you had written that letter and received Mr. Kimball's reply stating that it had been forwarded to Boston for answer, and before you received an answer from Boston, was any meeting held?
A. Yes sir we had a conference meeting in which Mr. Cates was invited to appear before that committee and make such talk as he desired.
1780 Q. What was the date of that meeting? Have you anything there to show?
A. If you will allow me to refer to my papers, I can tell you General.
Q. Why certainly, refer to them?
A. July "20" 1900.
Q. Was notice given in the public prints of that meeting before it was held?
A. Yes sir.
Q. Have you a copy of that?
A. Yes sir.
Q. Will you make it a part of your deposition?
A. It is as follows:—

To Hear Cates.

City Council will Meet this Afternoon

Water Company's Side will be Presented.

Again-t Alderman Birdsong's Rate Ordinance—Will not Pass Third Reading To-night.

A special meeting of the City Council will be held in the Council Chamber at 4 o'clock this afternoon. The meeting will be held for the purpose of hearing Chas. T. Cates, Jr. Attorney for the Knoxville Water Company, speaking in behalf of the Company concerning Alderman Birdsong's Water Rate Ordinance. Mr. Cates has intimated a number of times that he would be pleased to appear before the Council, or the Water Committee, and explain the Water Company's situation in the matter. The opportunity will now be given him. Alderman Birdsong returned to the City this morning, and formally invited Mr. Cates to appear before the Council this afternoon. Mr. Cates accepted the invitation. The Water Rate Ordinance, contrary to expectations, will not be brought up for final reading and passage at the regular meeting to-night. At least that was the programme announced to-day at noon. The final reading has been postponed in
1781 order that additional information desired may be obtained.

Alderman Birdsong is awaiting the reply of the "Home Office" of the Water Company in regard to information asked as to the general financial condition of the company. Upon receipt of this information, a called meeting may be held at which the ordinance may be brought up for final reading and passage. The ordinance, after passage, will doubtless be contested by the Water Company, and it is expected the courts will be resorted to.

Alderman Birdsong claims that the City has a right to, and will regulate the rates. "The only question to be laid before the courts" he says "is whether or not the rates as regulated are reasonable. That is the only question for decision, and as the rates are undoubtedly reasonable, the ordinance will be made effective. We do not wish to impose upon the Water Company, but merely want cheaper and more reasonable rates, and intend having them. After this ordinance we will probably take up the other phases of the water question, which have claimed the attention of the Board of late. These questions at issue are the change of location of the intake tower, the increase of pressure and size of mains in East Knoxville. On recent inspection I also found that the water supplied West and North Knoxville is so muddy as to be unfit for use. I will bring these different matters before the Council, one at a time, and intend the City shall have a better water service, if it is in my power to get it."

In regard to the hearing to be given Mr. Cates, Alderman Birdsong said: "In accordance with the desire of Mr. Cates, we have invited him to appear before the Council in behalf of his Company, and we will listen readily to any statement he wishes to make. I think this nothing but just and fair. The Council does not wish

to impose upon the Water Company or any other corporation and will not do so." The Council will hold its regular meeting tonight but what is like to come up before it, is not yet known."

1782 Q. Who was present at that meeting on behalf of the City and also on behalf of the Water Works?

A. There were present, Mayor Heiskell and seven Aldermen, Messrs. Birdsong, McClelland, Miller, Gammon, Davis, Murphy and Trigg. Superintendent Kimball and Mr. Cates represented the Water Company.

Q. When was that meeting held?

A. July 21st, 1901.

Q. The morning after the notice appeared in the papers that such a meeting would be held?

A. "An informal conference of members of the City Council was held yesterday afternoon," * * *

Q. What occurred at that meeting Mr. Birdsong?

A. Well Mr. Cates was there and he addressed the Council and the Mayor in regard to this ordinance, and presented his side of it, which was quite a lengthy talk, being an hour or two hours long.

Q. Were there any questions asked by members of the City Council of the attorney and Superintendent of the Water Company?

A. Yes sir I think there were several questions asked.

Q. How long did the meeting last?

A. I should say an hour or an hour and a half; something like that.

Q. Did you receive from the Water Company or its officials at Boston a reply to your letter of the 16th inst.?

Q. Yes sir.

Q. Was this letter received before the ordinance was passed on its third reading?

A. Yes sir.

Q. Have you that original letter?

A. Yes sir.

Q. Will you produce and file it?

A. The letter is as follows and the original is filed as exhibit "1" to this my deposition.

1783 Knoxville Water Company, Elbert Wheeler, Treas., 14 Beacon Street, Boston, Mass.

JULY 20*th*, 1900.

Mr. A. S. Birdsong, Chairman of Water Committee, Knoxville, Tenn.

DEAR SIR: Yours of the 17th inst. to our Superintendent at Knoxville, is referred to us for reply as stated in his acknowledgement thereof to you of same date.

Presuming that your letter was prompted by the communication of the 16th inst. from his Honor, the Mayor, recommending for reasons enumerated by him, the specific inquiries contained in your letter to us, you will permit us to say that even should we concede

the right of the city to change the rates charged by us for water (which we do not, but on the contrary maintain that these are fixed by existing contract stipulations between the city and us, and are therefore not subject to change except by mutual agreement) the committee would have no adequate basis for reaching equitable conclusions by having the information asked for in interrogatory No. 1 (which information is of course available to the city from the county records) as the amount of the Company's bonded debt represents only one of the several classes of capital invested in the works, all of which are fairly entitled to reasonable investment return before any reduction of rates or of income can properly become operative.

We suppose, however, that the city desires to avoid taking any action which would result in preventing such reasonable income return upon the monies invested from time to time, which investments have been necessitated by the continued growth of the city, the demand for filtered water and numerous other additions to and im-
1784 provements of the Company's plant, resulting in a system necessarily of large cost, but giving the city a supply proportionate to its requirements, with water of a quality hardly to be equalled in any city of the South or West.

As the single purpose of his honor, the Mayor, in addressing your committee was unreservedly stated to contemplate determination of the financial condition of the Water Company in order that the City may be informed whether or not the present rates are reasonable in view of the cost, or of said financial condition, and as your letter likewise unreservedly declares this to be the purpose of your inquiry, we may and do answer interrogatories "2" and "3" by saying that the gross income of the company is not sufficient, after paying necessary operating expenses, including salaries, (which are merely nominal in amount to its executive officers), to afford or pay a reasonable return upon all of its several forms of capitalization; but, on the contrary, not a little of the money invested by its shareholders has been absolutely without return. Any reduction therefore, in net income, through reduction of rates, would necessarily and correspondingly postpone the time when such reasonable return could be obtained.

Any reply to question "4" could be only an expression of personal opinion to which any one might, and doubtless with great propriety, well take exception.

The fifth question it is impossible for us to answer, having no knowledge thereof. We may, however, say that Wheeler & Parks never owned the Works, the title to them always resting in numerous stockholders, the present number approximating 200.

The sixth inquiry is practically answered by the preceding statements, excepting as to the cost of improvements, which we respect-
fully submit is immaterial, in view of the declaration made in
1785 answering interrogatories "2" and "3"; said cost being included in capitalization from which no adequate or reasonable return has thus far been possible of realization.

We have no desire to withhold from the City any information which is its due; but the statements above made should clearly indicate that any lower rates than those now existing may not be deemed

reasonable, when account is taken of the cost of construction and operation of the plant, as above set forth.

If further information is wanted, or if it is desired to equitably adjust this or any other matter of mutual interest, we beg to assure you we will most gladly take it up with you, being confident that when a full understanding of essential details is reached, there cannot only be no reasonable grounds for complaint, but an adjustment reached to our mutual satisfaction.

Very Respectfully,

KNOXVILLE WATER CO.,
ELBERT WHEELER, *Treas.*

Q. At what date did you pass the first ordinance, the one which you have been testifying about?

A. The first one passed was July 27th, 1900.

Q. Did that ordinance prove defective in any way?

A. Yes sir, in the caption of it the words "per annum" were omitted, and the same ordinance was introduced and passed with those words added, March 30th, 1901.

Q. Was there any difference between the ordinances of the 27th of July 1900 and the ordinance of March 30th, 1901 except the insertion of the words "per annum" in the latter ordinance?

A. I think not; there might have been some slight changes.

Q. Do you remember any changes in the rates?

A. There were very little if any; there might have been some—it was virtually the same ordinance.

1786 Q. Between the passage of the ordinance of the 27th of July 1900 and the ordinance of March 30th, 1901, state whether or not Mr. William Wheeler, the President of the Knoxville Water Company was before the City Council in regard to this rate business?

A. Yes sir he appeared before the Council.

Q. Was that at a regular session?

A. No sir it was just — informal session.

Q. Have you in your possession any letter from the Knoxville Water Company that fixes the date of this occasion of Mr. Wheeler's presence before your body?

A. Yes sir, I have a letter here.

Q. Will you file it as exhibit "#2" to your deposition and make it a part of your deposition?

A. Yes sir, it is dated October 18th, 1900, and I file the original letter as exhibit "2" to my deposition as requested. The letter is as follows:

"Knoxville Water Company, Frank C. Kimball, Supt., 619 S. Gay St.

Telephone 207.

KNOXVILLE, TENN., *Oct.* 18, 1900.

To the Honorable Board of Mayor and Aldermen, Knoxville, Tenn.

GENTLEMEN: Complying with the request of his Honor, the Mayor, made at the informal meeting of yesterday with your Board,

for conference upon matters of mutual interest that we make suggestions upon changes in existing contract relations, we beg to submit the following, namely:—

1st. Improved fire protection as follows:

A. High pressure to be furnished by us in case of fire, by which the present average of about 42 pounds on Gay street shall be increased to about 86 pounds, and at no cost to the city beyond installation and maintenance of necessary means for notifying us in case of fire.

B. Dispensing with existing steam fire engines because of
1787 said high pressure, thus enabling the city to save in labor of men, maintenance and care of horses (two pairs) also sundry amounts for fuel, repairs &c. from $4500.00 to $5000.00 per year.

C. Additional fire hydrants to the number of 100 in the original nine wards of the city, the same so located as to practically cover the whole territory thereof, and so that no point therein shall be more than 600 feet from a hydrant. These at a cost to the city of $45.00 each per year. The city to have the privilege at any time thereafter of locating additional fire hydrants without any charge whatever for rental to any extent and at any points, it may desire, within the present city limits, either upon mains now existing, or that may be hereafter laid to supply additional hydrants, provided that the city shall bear the expense of installation and maintenance of such free hydrants.

2nd. Reduction of domestic rates for water to the basis of existing fixture rates in West Knoxville on houses, stables and sprinking, with the further reduction on small houses, so that the rate on houses of two rooms shall be $4.00 and on houses of three rooms $5.00 per year; meter rates throughout to be the same as are now charged in the old city. All the above domestic and meter rates to be subject to a discount of 5% if paid within ten days of their date.

3rd. The further consideration upon which the above advantages to the city and its citizens shall accrue, to be the extension of the existing contracts with the city, dated July 1st 1882, and October 20th 1899 until August 1st 1928, reserving at all times to the city the right to purchase the plant as provided in said contracts.

Very respectfully,

KNOXVILLE WATER CO.
ELBERT WHEELER, *Treas.*

1788 Q. What was the date on which Mr. Wheeler was before your body.

A. October the 17th, 1900 was the date Mr. Elbert Wheeler was there.

Mr. CALDWELL: We desire to except to the newspaper article being filed as an Exhibit to the testimony of this witness, said newspaper article being entitled *"To hear Cates."*

COMMISSIONER: I sustain the objection as to the newspaper article being filed as an exhibit to this deposition, because it appears that in addition to the facts therein stated there is a considerable quantity

of the "Newspaper's opinion," but the witness will be permitted to take from the article dates and other facts to refresh his memory.

To which action of the Commissioner excluding said newspaper article, counsel for defendant excepts to the action of the Court.

Q. Mr. Birdsong I will ask you if during the consideration of this ordinance or ordinances regulating the water rates of this Company, you made an honest and persistent effort to get all the information possible from the Company and from other sources that would enable you to pass intelligently upon the question?

Objected to by counsel for plaintiff as leading.

Overruled by the Master and exception taken by counsel for plaintiff.

A. We certainly did; we worked hard on it and made every effort possible to obtain such information.

Q. I will ask you whether or not you were on any one or more occasions denied information that you deemed material by the Water Company?

A. Yes sir.

Counsel for plaintiff objects to the question.

COMMISSIONER: The objection is sustained, and counsel
1789 for defendant is asked to be more specific in his questions as to what this denial consisted of.

Q. State what demands for information to aid you in your investigation was made of the Water Company, and whether they granted the same or not?

A. So far as the demands were made, those demands were made by letters and correspondence and are already in the record and will show for itself.

Q. Did you ask for information other than by correspondence; did you ask them for one of their annual statements?

A. Yes sir I asked them for an annual statement, and also for one of their rate books.

Q. Were they furnished?

A. The rate book was furnished but the annual statement was not.

Q. During the hearings that were given before the informal meetings of the City Council, were the attorney or officers of the Company asked for information on points touching the regulation of rates?

A. Well there were several questions asked but what they were now I don't remember; of course they were all pertaining to rates, but just what they were I don't remember. It was quite a lengthy discussion and Mr. Cates invited us to ask any question that any member saw fit to do.

Q. And a good many questions were asked?

A. Well there were several, yes sir, because we wanted all the information we could get, and that was our object in hearing him.

Q. Was any hearing requested by the Water Company or anybody on its behalf that was denied by you or the City Council?

A. No sir.

Q. Had you any knowledge that they desired any further
1790 information at the time of the passage of either of these ordinances?

A. No sir we gave them all that they asked for and was glad to do it.

Q. About what was the reduction of rates, I mean the average reduction, made by your ordinance of March 30th, 1901?

A. Well I should say in the neighborhood of 20 per cent; some were more and some were less.

Cross-examination by Mr. CALDWELL:

Q. Mr. Birdsong, you have been in your double capacity as Alderman and Legislator, an active champion of popular rights against the Water Company, hav-n't you?

A. I have been for the people.

Q. Was the Water question an issue when you were first elected an Alderman?

A. I cannot say that it was, and yet there was a great deal of discussion too, about it, Mr. Caldwell, but whether you would call it an issue or not, I don't know.

Q. You introduced the ordinance which is now contested?

A. Yes sir.

Q. And when you were elected an Alderman you found in the archives of the City a rate ordinance which had been introduced by some citizens of West Knoxville during the political campaign in the preceding January, didn't you?

A. It was not introduced by citizens; it was introduced by one of the Aldermen.

Q. Who was the author of the ordinance?

A. I think Mr. Sterchi, as he was the Alderman from the 11th Ward.

Q. Mr. Sterchi introduced it, but wasn't it drawn by somebody else?

A. I couldn't say.

Q. Wasn't it known as the "Rogers' Ordinance"?

A. I couldn't say.

1791 Q. Did not you, when you, introduced the present ordinance, copy the rates that were fixed in that ordinance?

A. Why it was copied from this book—I had this book, this rate book, and in reading it we would take the same words in this rate book as in this ordinance—we started and went on through, and some of the rates were the same, some less and some more. We had to go by this book of Rates, Rules and Regulations.

Q. Did you have one of those books when you first drafted your ordinance?

A. Yes sir.

Q. But didn't you follow the West Knoxville ordinance almost exclusively?

A. We followed this book. It starts out with four rooms or less, five rooms and six rooms, and they both read the same, the amounts were the same in some places, in some places more, and in some places less.

Q. I am speaking now of the Sterchi ordinance. Did not you adopt the rates, that is the figures and charges of the Sterchi ordinance when you first drafted your ordinance and introduced it?

A. Well that is the question that I answered awhile ago. A great many of the figures were the same and some were not. It was not identically the same.

Q. And wasn't that called to your attention by a representative of the Water Company at the City Hall?

A. Yes sir, and I will give you the language he used. He said that my ordinance was the worst, but very similar, and that he could drive a mule through it.

Q. That is similar to the Sterchi ordinance?

A. Yes sir.

Q. Wasn't it identical with the Sterchi ordinance?

A. I have answered that once and told you no sir.

Q. Wasn't your ordinance amended after your attention had been called to the fact of its similarity to the Sterchi ordinance?

A. We made a good many changes in it Mr. Caldwell.

Q. Wer-n't a good many of the changes made on account
1792 of that statement I have just referred to?

A. No sir they were not.

Q. To whom did you apply for a rate book and annual statement of the Water Company?

A. I asked Mr. Kimball for it.

Q. Did you ask in writing?

A. No sir I went in person.

Q. When was that done?

A. Well it was during this investigation; I couldn't tell you the date.

Q. Was it before or after the introduction of the ordinance?

A. It was before the introduction of any of the ordinances.

Q. Do you remember the date in June you introduced your ordinance?

A. No sir I do not, but it was some time in June.

Q. Had you had any experience in the matter of water rates or water plants before you entered upon your investigations?

A. No sir.

Q. What was your purpose in writing to the different cities?

A. To obtain such information that we needed in framing this ordinance and comparing their rates with the Knoxville Water Company's rates and to see whether or not our rates were reasonable, and that we might frame an intelligent ordinance.

Q. Your investigation then consisted mainly in getting that information and comparing the rates of other companies with the Knoxville Water Company's rates?

A. And the cost of plants and everything pertaining thereto, in fact all the information we could get regarding water plants.

Q. Well what information did you get?

A. We got a great deal.

Q. What were the main items outside of this comparison of rates?

A. Well we got the rates of a great many different towns, we got the annual report which showed the cost of the plant, its bonded in-

debtedness, fixed charges and all other items pertaining thereto.

1793 Q. What was the reason that you did not persist in your effort to get information from the Knoxville Water Company?

A. Why they refused to give it to us as that letter states there. That letter there answers the whole thing.

Q. Please examine and see if this is not the concluding sentence in the Knoxville Water Company's letter, through Elbert Wheeler, Treasurer, made Exhibit "7" to the answer filed in this case, and dated July 20th 1900: "If further information is wanted, or if it is desired to equitably adjust this or any other matter of mutual interest, we beg to assure you we will most gladly take it up with you, being confident that when a full understanding of essential details is reached, there cannot only be no reasonable ground for complaint, but an adjustment reached to our mutual satisfaction?"

A. Yes sir that is very true enough that he says that, but when we asked for the information, we didn't get it.

Q. But did you ask for information except throught this letter?

A. Yes sir, the time that I asked Mr. Kimball for his annual report which would give that information.

Q. But that, as I understand you, was prior to the time you introduced your ordinance?

A. Yes sir it was.

Q. Then so far as the request for information was the one you made to Mr. Kimball prior to the introduction of the ordinance and the request made in Exhibit No. 4 to the answer in this case?

A. Well now Mr. Caldwell, let me explain that to you; in my letter of the 16th all the information that we wanted was asked in plain questions, and you can see from this letter here that he didn't answer a single one of them. That information was asked for and he didn't give it to us.

Q. The particular point I am addressing myself to now is, that the only request you made to the Water Company was in

1794 your said letter of the 16th (July 1900) and in your request made to Mr. Kimball before the introduction of the ordinance?

A. Yes sir they are.

Q. When you made that request of Mr. Kimball prior to the introduction of the ordinance, did you inform Mr. Kimball of the purpose for which you wished the annual statement and rate book?

A. I cannot say, but I, don't think I did, although the matter had been discussed publicly and talked in the newspapers.

Q. You mean the subject of the water rates generally had been discussed in the papers?

A. Yes sir, and the paper had stated that there was going to be a new ordinance introduced.

Q. But it had not been publicly discussed that you were going to make that request of Mr. Kimball?

A. Oh no sir.

Q. Who got the information on which the ordinance was based?

A. Why, the Water Committees, and I as Chairman did most of the work.

Q. Didn't you do substantially all the work?

A. Well you might say I did, Mr. Caldwell, although the other members met with me, and we went over all the matters and discussed them.

Q. Who wrote the ordinance?

A. I did; I wrote it with the assistance of Reuben Cates. I submitted it to him as City Attorney.

Q. You had a meeting of the Water Company, you and Mr. Miller and others, at Mr. Reuben Cates' office one night in regard to this ordinance didn't you?

A. We had a meeting there; I don't know whether Miller was there or not.

Q. You had prepared the ordinance before that time, hadn't you?

A. We were working on it, yes sir.

Q. Didn't you have it in its final form at that time?

1795 A. Well there was some small changes made on it I think afterwards. It was practically completed.

Q. And was it not agreed on at that meeting in Mr. Reuben Cates' office that night?

A. The ordinance was submitted to Mr. Reuben Cates that night for his opinion, and he said it was all right, as well as I remember.

Q. And it had then been put into such form as to be submitted, to him for his legal opinion?

A. Yes sir, but we had asked him in regard to the legal points before that Mr. Caldwell.

Q. Now when did you first consult with the Mayor in regard to this ordinance?

A. You mean what date?

Q. Yes sir?

A. I don't remember what date.

Q. Was it before or after the preparation of the ordinance?

A. It was before that.

Q. You say you don't remember the date in June at which the ordinance was introduced?

A. At the first reading?

Q. Yes sir?

A. It was either the first or third Friday of the regular meeting.

Q. And as I understand you no call upon the Water Company to be present at any meeting was made until the 20th of July?

A. We had two meetings with Mr. Cates—I don't remember the first date; I think Mr. Cates was up there when Mr. Elbert Wheeler was there, if I remember correctly.

Q. That meeting as I understand you was the 17th of October, 1900?

A. Yes sir.

Q. Mr. Birdsong, when Mr. (C. T.) Cates appeared before the members of the City Council, did he not state that the rates fixed in the proposed ordinance were unreasonably low?

A. Were unreasonably low?

1796 Q. Yes sir?

A. Do you mean high or low?

Q. I mean low?

A. Oh you mean in my ordinance that they were too low?

Q. Yes sir.

A. Yes sir I think he did.

Q. And didn't he state that the ordinance rates would not afford an income for the Water Company sufficient to pay its fixed charges and operating expenses?

A. I think he did. He also stated that we had no authority to introduce an ordinance of that kind.

Q. Now upon what information did you proceed to pass the ordinance?

A. Upon the information that we had gotten, as I stated before from other different Water Plants and by making comparison of the rates.

Q. How did you make the comparisons?

A. By their rate books against the Knoxville Water Company's and their bonded indebtedness and cost of plant and everything taken into consideration with what matters we had before us, and we had asked the Water Company here for all that information in order to make reasonable rates, which they refused to give us.

Q. What did you conclude the value of this plant to be?

A. Well we figured on it being worth about $500,000.00.

Q. And what did you figure on its gross revenue?

A. We figured between $75,000.00 and $80,000.00.

Q. And what did you allow for operating expenses without taxes?

A. Why we figured about $15,000.00 I think.

Q. $15,000.00 for operating expenses without taxes?

A. Yes sir I think we put it from $15,000.00 to $20,000.00 including taxes.

Q. Including taxes?

A. That is my recollection Mr. Caldwell.

Q. How did you get that information?

A. It was a mere estimate of ours, because we couldn't get it
1797 from them.

Q. What did you base that estimate upon?

A. Upon the size of the plant, the number of men they worked and the cost of pumping the water, and we took into consideration that the water was right at the pump and didn't have very far to be pumped, and that the plant was close to the coal fields, and that they ought to furnish water cheaper than if they had to haul their coal and pump their water much farther, and consequently that they ought to charge less rates.

Q. Did you find any city of approximately 30,000 inhabitants whose water plant was being conducted as a private corporation upon an annual operating expense of $20,000.00 including taxes?

A. We had a sheet that had all the water companies on it that showed the cost of operating expenses and everything that way; there were probably 100 different water companies on it.

Q. In making your estimate of gross revenues, did you make or

attempt to make any division or distinction between the revenues derived in the city proper and that part outside the city?

A. No we were figuring on the plant inside the city.

Q. And you estimated that at $500,000 in value?

A. Oh I thought you were talking about rates then: if I understand that right, it refers to rates.

Q. And you valued the property of the Knoxville Water Company inside the city at $500,000.00?

A. We put a value on the Knoxville Water Company of $500,000.00.

Q. Well now was that the plant inside the city or the plant inside and outside the city?

A. Now whether that question I asked, I don't know; I wouldn't be positive about it. I know we put down the Knoxville Water Company at $500,000.00 as what it was worth.

Q. Then as I understand you estimated the total value of
1798 the plant both inside and outside the city at $500,000.00?

A. I would consider it that way.

Q. Was the question of making any distinction of the plant inside and outside the city considered at all in your investigation?

A. It was on revenue, because I mentioned the fact that the Southern Railway Company was one of the largest consumers and that it was outside the corporation.

Q. What allowance did you make in the matter of revenues on that account, if any?

A. We allowed some, but what amount I don't know; we didn't figure any certain amount.

Q. Did you apportion the income of the plant in the city and the plant outside the city?

A. No, only that we allowed for that income of the Southern Railway. I remember mentioning that the Southern Railway was one of the largest consumers that they had, and that they were outside the corporation, and I said that I didn't know whether we had any control of that outside of the corporate limits or not.

Q. Did you make any allowance for that fact?

A. No sir.

Q. What effect did you give it?

A. We allowed so much for it; we took it into consideration that they got some income out of it, but what it was we couldn't tell and had no way of telling.

Q. You say "we;" whom do you mean by "we?"

A. The Water Committee.

Q. Who were your associates on that Committee?

A. Mr. Davis and Mr. Conner.

Q. Did those gentlemen make any of these investigations personally?

A. Yes sir.

Q. What did they do?

A. Well Mr. Conner brought some rate books in from
1799 Harriman Junction and Mr. Davis got some information. I think Mr. Davis brought a rate book from Richmond, Virginia, if I remember correctly, and also a water receipt.

Q. Now, as a matter of fact, Mr. Birdsong, the information that you had, that was to any extent accurate, or capable of being reduced to figures, was all in regard to plants outside the City of Knoxville, wasn't it; you had no exact knowledge of matters connected with this plant?

A. No sir, we couldn't get it, or at least we asked for it and it was refused us.

Q. Is the city of Chattanooga included in the cities you got these rate books from?

A. Yes sir, Chattanooga was included in it.

Q. Is Nashville included in it?

A. Yes sir.

Q. And Memphis?

A. No sir, we didn't have Memphis; in that exhibit "4" I think, gives the names of the companies, Mr. Caldwell.

Redirect examination by Mr. PICKLE:

Q. Mr. Birdsong, you were asked by counsel for the Water Company, if in this matter you acted as the champion of the people against the Water Company. I will ask you now if you had any other motive in the action that you took in investigating this matter, in presenting and having passed this ordinance, than performing your duty as an alderman of the city?

A. None whatever General.

Q. I will ask you if you did not give out the statement public and as part of the paper already made an exhibit to your deposition, as follows:—"In regard to the hearing to be given Mr. Cates, Alderman Birdsong said:—'In accordance with the desire of Mr. Cates, we have invited him to appear before the Council in behalf of his company, and we will listen readily to any statement
1800 he wishes to make. I think this nothing but just and fair. The council does not wish to impose upon the Water Company, or any other corporation, and will not do so." Did not that statement appear in the notice of the meeting held on the afternoon of July 20th 1900?

A. Yes sir.

Q. You were asked about the statements or insistence of Mr. Cates before your body. I will ask you to state whether or not he did not insist strenuously, and devoted most of his argument that you had no right to regulate the water rates at all?

A. Yes sir.

Q. I will ask you if he gave, or if the Water Company's officials who were present, would give any figures in support of their contention that the rates proposed by the ordinance were unreasonable?

A. No sir, they never did give us any figures.

Q. Is it or not a fact that they contented themselves by making the assertion that they were unreasonable, without giving you any figures to show that fact?

A. Yes sir.

Q. You have stated that some one stated, while your ordinance

was pending that it was worse than the Sterchi ordinance, and that he could drive a mule team through it?

A. Mr. Cates stated up there that night that the ordinance was worse than the Sterchi ordinance, or as he called it the "Jesse Rogers" ordinance.

Q. Was it he that made the statement about driving the mules through your ordinance?

A. Yes sir, that was published in the paper the next morning or sometime afterwards.

Q. That was while the ordinance was pending for passage?

A. When Mr. Cates stated that my ordinance was worse
1801 than the Jesse Rogers ordinance, that was while my ordinance was pending; it was while we were listening to him on that afternoon.

Q. You were quoted the closing sentence of the Water Company's letter, by Mr. Wheeler, its Treasurer to you, politely offering to give any further information that you desired?

A. We didn't consider that any information General; we couldn't get anything out of that letter.

Q. It was the information that you had asked in your previous letter, and which he had refused to give, and no further information that you were wanting, wasn't it?

A. Yes sir.

Q. Why was it that you didn't write again?

A. We had asked for the information we wanted and they refused to give it, and we didn't see any use of asking again for the same thing; we didn't want more than we asked for, because we would have been satisfied with that.

Q. At the time you were considering these rates, you had before you the Rate Book of the Water Company, didn't you?

A. Yes sir; I have that little book before me now—the same book.

Q. Is this (book) yours?

A. Yes sir.

Q. Is it the Rate Book of 1895?

A. April 1st, 1895, yes sir.

Q. State whether or not in framing your ordinance you adopted the classification of services by that book?

A. Yes sir.

Q. You have stated that you obtained information regarding a number of water plants in other cities. I will ask you whether or not you obtained information that enabled you to compare Knoxville with those cities, as well as the rates of those cities?

A. We thought so, yes sir.

Q. You have stated that you don't remember whether you told Mr. Kimball when you demanded of him one of their rate books and annual report, what you desired with them. He fur-
1802 nished you the rate book, did he not?

A. I didn't demand it of him; I asked him for it, and he gave me this book, but didn't give me the other (annual statement).

Q. Was it known to Mr. Kamball at that time that you were Chairman of the Water Committee of the City Council?

A. Yes sir I should say it was; it had been published and that matter had been discussed.

Q. And the matter had been under discussion in the public prints for some time?

A. Yes sir.

Q. Mr. Birdsong, what in your opinion would be the effect upon the quantity of water used, if the rates were lowered in accordance with your ordinance of March 30th 1901. Would, in your opinion, the effect be to increase considerably the consumption of water in the city of Knoxville?

A. Well I think so. I would like to give an explanation why: for instance, everybody, where things are cheap will always use more than they will when at a higher rate, but as to say "knowing this" I couldn't tell.

Recross-examination by Mr. CALDWELL:

Q. Did you make your rates lower than you otherwise would have made them because you expected the lowering of the rates to result in an increase of consumption of water to the Water Co.?

A. No sir, I made them because I thought they were unreasonably high.

Q. Then you did not consider, in framing the ordinance, the question of whether the reduction of rates would result in an increase of consumption of water?

A. Well I thought it would give the people an opportunity to use more water.

Q. Was that the motive inducing you to fix the rates as low as you did?

A. Not especially; it was one of them.

1803 Q. You say it was one of them?

A. Yes sir in order to give everybody a chance to use water that would use it.

Q. Then if you had not been of the opinion that the lowering of rates would result in an increase of custom, would you have made the rates hig-er?

A. No sir.

1804 T. W. JOHNSON, next witness called on behalf of the defendant, having been first duly sworn, testified as follows:—

Examination by Mr. PICKLE:

Q. Give your age, residence and occupation?

A. I am 41 years old, residence, Knoxville, Tennessee, and am engineer in the Fire Department.

Q. How long have you been an engineer in the Fire Department at Knoxville?

A. Three years and some months.

Q. Have you had occasion to take the pressure afforded by the

Knoxville Water Company anywhere on the mains in Knoxville, if so when and where and what pressure did you find?

A. We took the pressure at every plug we connect with, but to remember them I couldn't do that, as there are too many connections made.

Excepted to by counsel for complainant as incompetent and irrelevant.

Over-ruled by the Commissioner and exception taken.

Q. I will ask you if you took the pressure at the corner of Gay and Commerce streets?

A. Yes sir.

Q. What is it at that point?

A. From 40 to 45 pounds.

Q. At State and Commerce, have you taken that?

A. Yes sir.

Q. What was it at that point?

A. From 45 to 50 pounds.

Q. Where are these points named; are they about the center of the prineipal portion of the City?

A. Yes sir, something near the chief center of the city.

Q. What height buildings are on Gay and State streets, or between those streets?

1805 A. Anywhere from two to eight stories.

Q. What sized water mains on Gay street?

A. Well I don't know only from outside information; so far as my own information is concerned, I couldn't say.

Q. Well Mr. Johnson, you may state whether you have had any difficulty in obtaining water for the extinguishment of fires, and state the particular instances and when it occurred?

Excepted to by counsel for complainant as incompetent and irrelevant.

Over-ruled by the Commissioner and exception taken.

Q. —and what the difficulty was?

A. Well in East Knoxville the first time I ever had any trouble was on East Main Street fighting fire at Pat Campbell's and we had very little water there, in fact the engine pumped it dry in a very few minutes.

Counsel for complainant excepts to the answer as entirely irrelevant.

Over-ruled by the Commissioner.

Exception taken by counsel for complainant.

Q. Go on with any other instances?

A. And we had trouble again this last December at the corner of State and Main streets. The water was insufficient there to fight the fire we had.

Q. Any other instances Mr. Johnson?

A. No sir, those are the only two instances that I had where the water was insufficient to fight the fire.

Q. Well what was the nature of the trouble you encountered?

A. Well in running the engine hard, the supply of water gave way—it only supplied the smaller nozzle with a small stream of water and the larger one was part of the time water and part of the time air. The smaller nozzle was an inch nozzle and the larger
1806 one was an inch and a quarter.

Mr. CALDWELL: The foregoing question and answer excepted to as irrelevant, incompetent and not responsive to any issue in the cause. Over-ruled. Exception reserved.

Q. Were you engineer at the time of the big fire here a few years ago that destroyed a part of the Gay street property?
A. Which part of Gay street?
Q. The east side of Gay street, which has since — rebuilt?
A. The George Brown Hardware Company?
Q. Yes sir?
A. The 1897 fire?
Q. Yes sir?
A. No sir I wasn't engineer at that time.
Q. State whether or not there have been two very destructive fires between Gay and State streets in the locality where the December fire occurred of which you have spoken?
A. Yes sir, there has been a very great fire in that territory in last December.
Q. And another one in 1897, was there?
A. Yes sir.
Q. And you found the water supply inadequate for fighting the fire of December 1902?
A. Yes sir.

Cross-examination by J. W. CALDWELL:

Q. How long did you say you have been in the fire department?
A. Three years and some months.
Q. Do you remember about what the average number of fire alarms a year is?
A. No sir I couldn't remember.
Q. About what if you can recall Mr. Johnson?
A. Well I couldn't give you the exact number, but something like 125 a year; probably they will run higher and probably some lower.
Q. Now as I understand during the time you have been in the Fire Department you have had trouble on only two occasions in
1807 getting sufficient water?
A. Yes sir.
Q. And one of them was on Main street at Pat Campbell's house?
A. Yes sir.
Q. How close is that to the Reservoir?
A. Well I couldn't tell exactly; it is several squares away though.
Q. What was the trouble there, the want of pressure or water?
A. The want of pressure and water too. That was a very low pressure and as I understood a very small main.
Q. Now when you had that fire over here last December at George

Brown's house, you say you had trouble in getting sufficient water from the hydrant on the corner of State and Main?

A. Yes sir.

Q. Was that State and Main?

A. No sir, it was State and Commerce where I was connected up; I wasn't on Main street.

Q. I understood you to say that it was State and Main?

A. It was State and Commerce.

Q. Don't you know Mr. Johnson that that want of water from the hydrant at the corner of State and Commerce streets was caused by the fact that there were three 4 inch elevator pipes that were running into the building that was on fire, and that they were working during the fire and wasting the water?

A. No sir I didn't know anthing of the kind.

Q. Hav-n't you been so informed since that time?

A. No sir.

Q. And don't you know the fact that as soon as the elevator pipes were shut off that you had plenty of water?

A. I never had plenty of water from the time I started until I shut down.

Q. Didn't the supply improve any?

A. Not that I could tell.

Q. Where was your engine?

A. There at the School Building at the corner of State and Commerce.

Q. Please give me the date you went into the Fire Department?

1808 A. February 23rd, 1900.

Q. So you have had this trouble twice in that time?

A. Yes sir.

Redirect examination:

Q. Mr. Johnson, in the ordinary run of fires they are small, are they not, and require small quantities of water?

A. Yes sir.

Q. And it is only in case of large fires that the water supply is tested?

A. Yes sir.

Q. These fires of 1897 and 1902 were in the business portion of the city, and were large fires were they not?

A. Yes sir.

Q. And these two fires were in the same locality substantially, wer-n't they?

A. They were in the business district on Gay street.

Q. And in the same district?

A. The same square, yes sir.

Recross-examination:

Q. You don't mean to say that you had any trouble with the water supply of 1897, do you?

A. No sir, I don't know anything about that.

—— ——.

The further taking of deposition was adjourned until 9:00 Wednesday morning July 22nd, 1903.

1809 WEDNESDAY MORNING, *July* 22, 1903—9:00 a. m.

The further taking of depositions was resumed.

CHARLES W. SEARLE, next witness called on behalf of the defendant, being first duly sworn, testified as follows:

Examination by Mr. PICKLE:

Q. Mr. Searle, give your age, residence and occupation?
A. I am 52 years old, residence is Knoxville, Tennessee, and am Secretary and Treasurer of the Knoxville Insurance Exchange.
Q. How long have you been serving in the capacity last named?
A. Since 1885.
Q. In the City of Knoxville?
A. Yes sir.
Q. Whom do you represent in that capacity, Mr. Searle?
A. Well I represent what we term the Kentucky and Tennessee Board of Underwriters. We have charge of the two states of Kentucky and Tennessee. They are the representatives of the Insurance companies doing business in these two states.
Q. What character of Insurance Companies?
A. Fire Insurance.
Q. In what manner are the insurance rates for Knoxville and cities in Tennessee and Kentucky fixed?
A. In what manner are they fixed?
Q. Yes sir, the insurance rates?
A. By schedule, if I get a correct understanding of your question.
Q. Well by whom is that schedule made?
A. Well that is made by the representatives of the companies who have that to do; I don't know just who they are, but they are made by people high in authority.

Q. Does the water supply of a city enter into the question
1810 of insurance rates?
A. Yes sir.

Q. Does the pressure—what is the pressure required—I mean the standard-pressure in the city of Knoxville in order that the property owners may have favorable insurance rates?
A. Anywhere from 80 to 100 pounds, is my understanding to the square inch.
Q. What pressure is afforded in fact by the Knoxville Water Plant?

Mr. CALDWELL: We except to the last two questions and last answer as incompetent and irrelevant.
Mr. PICKLE: We conceive these questions go to the value of the plant, its sufficiency, &c.
Mr. CALDWELL: We don't know of any contract that requires anything with reference to insurance rates demanded of insurance companies.

COMMISSIONER: I don't believe I care to exclude the testimony and will allow him to ask it.

Exception taken by counsel for complainant.

A. About 45 pounds I understand on Gay street, and it varies perhaps according to the lay of the land in different parts of the city.

Q. State whether or not Gay street is the street of the city on which the principal business houses are located?

A. Yes, sir.

Q. Mr. Searl: what are the requirements in order that property owners may have favorable insurance rates in Knoxville as to the supply of water that shall be stored in the elevator? how many days supply are required?

A. Five days for domestic purposes.

Objected to by counsel for complainant.

Over-ruled. Exception taken.

Q. What is the altitude required for a reservoir for like purposes; how many feet elevation?

1811 A. 185 feet if I remember correctly.

Q. What is the elevation that the Knoxville Water Company in fact affords, or did afford in the year 1901 and prior thereto?

A. 150 feet I believe the report, so showed, or about that. I would like to say that this report made by an inspector on the Knoxville Water Company, was made by an expert, and these things coming from me are from that report as I have read it.

Mr. CALDWELL: Then we desire to except to this testimony as hearsay.

A. I have that written report and can produce it if allowable. I am simply stating that an examination was made by an expert, and am repeating what was contained in said expert's report.

Q. I will ask you if it is the report upon which all insurance rates are fixed and for which people take insurance?

A. Yes, sir.

Objected to by counsel for complainant.

A. The rates are based upon this report and as I have the report these are the figures in it.

COMMISSIONER: So far as this witness gives figures of elevations, pressure, &c., the exception is sustained because not the best evidence.

Q. Now I will ask you if insurance rates are fixed in Knoxville or not upon the basis that the elevation of water in the Reservoir is 150 feet, and if you so give it out to the agents of the several companies you represent?

A. Less than the standard required, and 150 feet is what I remember that report to be.

Q. The standard required by the companies is 185 feet as I understand you?

A. Yes, sir.

Q. Now you have stated they require five days' storage supply of water; what is the supply, how many days afforded by the
1812 plant at Knoxville as constituting the basis upon which insurance rates are based?

A. Less than one day and a half, according to this same report.

Q. Mr. Searle, is there any defect of the location of hydrants as affecting insurance rates?

A. Yes, sir, the distances are too great between them.

Q. In what way is the distance too great; what is the basis upon which favorable rates are given, and what is the fact with reference to the location of hydrant-?

A. The distance in the business district should not be more than 150 feet and in the residence district not more than 300 feet. The present conditions are that in the business districts they are nearly double that, or 300 feet perhaps, and in the residence districts nearly double what the standard requires.

Q. Now how do you adjust rates with reference to particular properties. Just explain the method of fixing the rates on different properties?

A. Do you mean under the present conditions here?

Q. Yes, sir.

A. I have a certain schedule applying to all the classes of property—a certain schedule for each class—that are made up from a basis made first from the class of the town, and we start out with 100 as the basis from which we begin to work, and we charge for certain deficiencies that may be found in the building or the occupancy of it, &c., until we reach what is considered to be the rate of fair insurance.

Q. To illustrate, you would take so many points off of the 100 if the water supply were inadequate?

A. Yes, sir.

Q. How many points would you take off if the pressure were 80 instead of 45 pounds; how many points would that reduce insurance in Knoxville as it exists today?

1813 A. I would rather answer that question in a general way from the fact that I may now go to repeating this report made.

Q. Answer it in your own way?

A. If I should answer the question I should say that the deficiency charged to the City is because of the deficiency in pressure, the distance between the hydrants and the elevation and capacity of the Reservoir. There are nine points lost in the Water plant.

COMMISSIONER: That nine points lost is the water supply or storage capacity?

A. Not altogether. They are divided. There are certain points charged for things, and now my memory—well, I wouldn't like to swear just how those are, but two points, if I remember correctly for the pressure.

Q. Well, speak from memory?

A. And I think, as I recollect, five points for the elevation and

capacity of the reservoir, and two points for the hydrants. There are nine points lost.

Q. Now, if I understand you, if this Water plant complied with the standard requirements of the Underwriters whom you represent, 9 points on the 100 would be taken off the insurance rates as they exist at the present time?

A. Yes, sir.

Cross-examination by J. W. CALDWELL:

Mr. CALDWELL: Plaintiff excepts to the whole of the foregoing deposition as irrelevant and incompetent, and as not bearing upon any issue in the cause, and being in his judgment introduced as applicable to the question of the value of this plant at a sale under an Act of the Legislature of Tennessee, passed at its last session.

1814 Over-ruled by the Commissioner.

Exception taken by counsel for Plaintiff.

Thereupon plaintiff reserrves its right of exception and proceeds to examine the witness.

Q. Mr. Searle, you say you understand that the pressure on Gay street is 45 pounds; how did you understand that?

A. From tests that have been made.

Q. Who made the tests?

A. I was with one inspector who was here and made the test.

Q. Did you make the test personally?

A. With a gauge, he and I together.

Q. Do you understand how to make a test of that kind?

A. I understood it as he did it. He put the gauge on, and I saw how the gauge stood.

Q. Did you understand the gauge without his explanation?

A. Yes, sir.

Q. You say that the elevation here is 150 feet; how do you know that?

A. From his report.

Q. You have no personal knowledge of it?

A. I never measured it.

Q. You say the water storage in the Reservoir is a supply of a day and a half?

A. From this same inspector's report, yes, sir.

Q. You have no personal knowledge of that?

A. No, sir, I never measured it.

Q. When this inspector told you that the pressure was 45 pounds on Gay street, did that refer to the ordinary pressure or the high pressure?

A. The ordinary pressure.

Q. Do you know what the high pressure is?

A. I don't know that I do.

Q. Don't you know that as well as you know the other?

1815 A. When he made that test, there was no hydrant on for him to make the test from.

Q. Haven't you, information in regard to the high pressure? that is as thorough and reliable as the other?
A. There was no high pressure hydrant on the other.
Q. It can be put on, can't it?
A. Yes, sir.
Q. Don't you know what it would be if it was put on?
A. I have been informed, but I never heard anything authoritative.
Q. And you say the hydrants are not sufficient in number?
A. I said in distance; that the distance was too great between them.
Q. Well, then they ought to be increased in number oughtn't they?
A. To cover the same territory, yes, sir.
Q. How many ought the number to be increased in the business district?
A. I couldn't say, Mr. Caldwell, as I never measured it up.
Q. Oughtn't it to be double what it is?
A. If they average 300 feet apart, yes, sir.
Q. Well, that is the principal cause of the trouble, isn't it?
A. That is one of the causes.
Q. Isn't that the principal one?
A. I couldn't say that it was.
Q. Do you know anything about the water company trying to get the city to take more hydrants?
A. I have heard something about it, but I don't know just how that is.

Redirect examination:

Q. Only two per cent. of the nine per cent. is assigned to deficiency on account of the hydrants, as I understand you?
A. That is my recollecton of it, yes, sir.
Q. High service, by the contention of the Water Company, is applicable to only certain elevated districts in the town, isn't
1816 that correct?

Objected to by counsel for plaintiff as that is a matter of contract. Exception sustained.

Q. Well I will ask you whether other than certain high elevated portions of the town are supplied by the company with high service or where?

Same exception reserved by counsel for plaintiff as the last above mentioned.
Over-ruled. Exception taken.

A. Only portions of the town are supplied with high service, to my knowledge.
Q. What portions are those, Mr. Searle?
A. Heretofore, West Knoxville and a part of North Knoxville.
Q. At what point on Gay street did you take the pressure?
A. From one end to the other.

Q. At what time in the day, or was it night time, that you took it?

A. Along in the day time; in the morning and in the afternoon; we were at work in different parts of the town all day.

Q. As I understand you the 150 foot elevation of the Reservoir and the less than one and a half day supply of water are assumed as the basis of rates fixed by the Underwriters for the City of Knoxville?

A. Yes, sir.

Counsel for plaintiff excepts to the last question and answer as being hearsay testimony in regard to an assumption.

Over-ruled. Exception taken.

1817 Dr. C. DEADERICK next witness called on behalf of the defendant, being first duly sworn testified as follows:

Examination by Mr. PICKLE:

Q. Doctor, give your age, residence and profession?

A. I am 55 years of age, live at Knoxville, Tennessee and am a physician and surgeon.

Q. How long have you resided in Knoxville and how long have you practiced medicine?

A. I have resided in Knoxville 55 years and practiced medicine 32 years.

Q. Have you, during the past 32 years been actively engaged in the practice of medicine?

A. Yes sir.

Q. Doctor, have you had occasion to consider attentively or otherwise the water supply afforded to Knoxville by the Knoxville Water Company?

A. I have sir, with as much attention as the casual observer could be expected to have. I have brought the matter before the Knox County Medical Society within the last 3 years in an effort to induce the Water Company to put their pipe higher up the river.

Counsel for plaintiff excepts to the question and answer as irrelevant and incompetent.

Q. Doctor Deaderick, are you familiar with the location of the intake tower of the Knoxville Water Company?

A. Yes sir I have seen it hundreds of times.

Q. And are you familiar with its situation with reference to sanitary conditions in that locality?

A. Yes sir, I have had special reasons for investigating that.

Counsel for plaintiff excepts to the last question and answer. Over-ruled. Exception taken.

1818 Q. Well Doctor was the intake tower constructed at the time of the original construction of the plant, or subsequently?

A. I don't know that General.

Q. Do you know about what time it was constructed; how many years ago?

A. No sir I do not; it would be guess work for me to say.

Q. I will ask you Dr. Deaderick, testifying as an expert in matters of health, or matters affecting the health or purity of the water supply of the city of Knoxville, what are the objections to the location of that intake tower at the point where it is located?

Counsel for plaintiff excepts to the question as irrelevant, incompetent and bearing on no issue in the cause.

Over-ruled. Exception taken.

A. The most serious objection that I had, and we who investigated it had, was to the emptying of a certain branch of filth, after a rain especially, from a certain branch or hollow that ran from the river up perhaps ¾ of a mile, which branch or hollow was lined on either side by houses occupied principally by poor people, who use imperfect sanitation around their premises, having pig-pens, stables and privies that are imperfectly arranged, and when a hard rain came, thos whole area was washed into the river right above the intake pipe. There are several hundred little houses located in that region, and the whole area—I don't know how much surface, but a very large surface—was drained into this spring branch and goes into that pipe. We thought that was a menace to the water of the town, because it was bound to be loaded with filth of all sorts. A case of typhoid fever on that side of the hill would probably throw all its filth out into that brance or hollow which consequently washes down into the intake pipe. I wouldn't dream of erecting an apparatus of that kind right above my residence, for I would
1819 certainly feel I was in danger of various diseases, especially typhoid fever. While we recognize the fact that this water was strained, percolated through sand, and perhaps is as good as any, it is said to be a fact according to my reading that it is utterly impossible to strain out all the deleterious matters that are in it. They can perhaps get a great deal of it out, but it is impossible to get it perfectly pure, and while the water may be pure as compared with other water, for instance Philadelphia, it is not as pure as it might be if that abominable menace were removed.

Counsel for plaintiff excepts to the question and answer as irrelevant and incompetent and not bearing upon any issue in the cause, and especially as not affecting the invested value of this water plant, and because the intake tower is located where it was required to be located in the contract with the city.

Overruled. Exception taken.

Q. Doctor, how far is the intake tower located below the mouth of White's Branch, I believe it is called?

A. I am not sure about the distance; I would say 200 yards. I am merely guessing at it.

Q. How long has that hollow which is drained by White's branch, been inhabited?

A. It has been inhabited partly, for I suppose 20 years or more,

but it has filled up in the last few years a good deal with very small dwelling houses.

Q. About how many people live in that hollow drained by White's Branch?

Counsel for plaintiff excepts to the question as irrelevant and incompetent.

Over-ruled. Exception taken.

1820 Q. Or about how many houses are there drained by it?

A. We had a committee appointed by the Knox County Medical Society to investigate that matter, and my recollection is that they said there were some 500 or 600 houses that the yards were drained into this branch.

Counsel for plaintiff excepts to the last question and answer as irrelevant and incompetent.

Over-ruled. Exception taken.

Q. When was this investigation made?

A. The last one about two years ago or less; within the last two years.

Q. How are the privies that are connected with those residences out there Doctor; how are they constructed?

A. They are pits dug in the earth on the side of the hill, and the pits overflow and run into that hollow every big rain.

Q. Is there a constant flow of water from White's Branch?

A. Yes sir, but after a big rain there is a perfect river almost goes down that hollow and follows up the White Spring Branch so that you can hardly see anything of it.

Q. I believe you stated that hollow was about ¾ of a mile long?

A. Guessing at it, I would say so.

Q. How are the hills on either side of the hollow, tolerably precipitous?

A. Tolerably precipitous.

Q. And they extend down the branch along its course?

A. Yes sir. All along down the side of that ridge is being filled up, and it runs down to and past the spring.

Q. Doctor has there been any increase of the disease since the location of the intake tower as it is now located, since the population of that valley above there, in the city of Knoxville?

Mr. CALDWELL: We except to the question and ask the ruling of the Court on it.

Exception sustained.

1821 Q. Now I will ask you furthermore Doctor whether or not typhoid fever is understood by the Medical profession to result largely from an impure water supply?

Counsel for plaintiff excepts to the question.

Over-ruled. Exception taken.

A. Yes sir, a large majority of the cases are supposed to come from impure water.

Q. Then I will ask you whether or not in the city of Knoxville

typhoid fever has, for the past few years, and since the location of the intake tower at that point, and the settling up of that valley, prevailed to any greater extent than before?

Counsel for plaintiff excepts to the question.

Sustained by the Master.

To which ruling of the Court the defendant excepts.

Mr. PICKLE: I except to the action of the Commissioner and propose to prove by Dr. Deaderick that the city of Knoxville——

Mr. CALDWELL: I object to his stating what he proposes to prove.

COMMISSIONER: The Master rules that it is not competent to prove the number of cases of typhoid fever since 1894 and before, because too difficult to trace as to cause and effect. I decline to let you introduce what you think the witness would say by way of argument at this point.

General PICKLE: It is not by way of argument, but I simply wish to make the statement of what I expect to prove by the witness.

COMMISSIONER: I decline that.

General PICKLE: Counsel for defendant proposed to prove what the witness would state but the Commissioner declined to have it put in the record to ——

1822 Cross-examination by Mr. CALDWELL:

Q. Doctor are you an advocate of the municipal ownership of water plants?

A. Yes sir.

Q. You have no personal knowledge of the number of houses in the valley and on the White Spring Branch?

A. Not the exact number. My personal knowledge is there are several hundred, but my knowledge of the exact number, I do not know.

Q. And you have never made an analysis of the water after it was filtered?

A. No sir, I wasn't foolish enough to go into that. There is not a man in Knoxville capable of doing that, either chemist or doctor with reference to typhoid fever and all other diseases. It requires a skilled microscope man to do that, and there is not one that I know of, in the town.

Mr. CALDWELL: Plaintiff declines to cross examine the witness upon the other points covered by his testimony, believing the same to be incompetent and irrelevant and as not applicable to any issue involved in this cause.

1823 Dr. S. M. MILLER, next witness called on behalf of the defendant, being first duly sworn, testified as follows:

Examination by Mr. PICKLE:

Q. Dr. Miller, give your age, residence and profession?

A. My age is 52 years, residence Knoxville, profession physician and surgeon.

Q. How long have you practiced the profession of physician and surgeon?

A. Twenty-seven years.

Q. Doctor have you given consideration to the water supply of the city of Knoxville as afforded by the plant of the Knoxville Water Company, if so, what steps have you taken in that matter?

A. I have given it some consideration with reference to the purity of the water supply. I was a member of the Committee appointed by the Knox County Medical Society about two years ago to inspect and report upon the conditions about the intake tower.

Q. Well what investigations did you make and what was the result you arrived at?

A. As a member of that Committee I made a personal inspection and found that the intake tower was constructed at the bank of the river where it took the water in that flowed close along the land border and that it flowed into the river a short distance above the tower—there was a drain entered the river a short distance above the tower that came from a section of the town that was not provided with sewers, where the surface drainage went into the river, which necessarily contaminated the water that went into the intake tower.

Counsel for plaintiff excepts to the foregoing question and answer as calling for and stating things that are irrelevant, incompetent and not responsive to the legitimate issues in the cause.

Over-ruled. Exception taken.

1824 Cross-examination by Mr. CALDWELL:

Q. Doctor you have never analyzed this water yourself?

A. No sir.

Q. And the Medical Society which ordered this investigation never analyzed it?

A. No sir.

Q. Do you know of any analysis being made of it?

A. No sir.

Q. You say this was some two years ago, this investigation?

A. About two years ago; I don't remember the exact date.

Q. Doctor, I want to ask you if you or your Society ever had or made any communication with the Knoxville Water Company in regard to this investigation of the water supply?

A. None at all sir.

Redirect examination:

Q. Doctor wasn't the matter of your investigation stated and published in the papers of the city?

A. Yes sir.

Recross-examination:

Q. What paper was it published in Doctor?

A. I don't recall. We made our report to the Board of Health and I am not certain of its publication, but I think it was though.

Q. Did the Board of Health take any action in consequence of the report?

A. I think not sir.

—— ——.

1825 DAVID GETAZ, next witness called on behalf of the defendant, having been duly sworn, testified as follows:—

Examination by Mr. PICKLE:

Q. Mr. Getaz, give your age, residence and occupation?
A. I am fifty-four years of age, I live in Knoxville, Tennessee, and my occupation is a contractor and builder.
Q. How long have you been engaged in the City of Knoxville in the business of contractor and builder?
A. Twenty-two years.
Q. Have you been actively engaged in that business during that period?
A. Most of the time.
Q. What character of work have you been doing during that period?
A. Well my work mostly has been public buildings, also residences, brick buildings, s-one buildings and frame buildings.
Q. In the work that you have done or had done, have you done excavation work—rock and earth?
A. I have sir.
Q. And brick work?
A. Yes sir.
Q. And carpenter work?
A. Yes sir.
Q. And painting?
A. Yes sir.
Q. And other varieties of work incident to a general contractor's business?
A. I have sir.
Q. Please name of the work you have done, some of the principal jobs you have done in Knoxville?
A. I built the Deaderick Building across the street here, the courthouse of Knox County, the court house at Clinton, I don't remember the name of the County, the Henson Building up on Market Square, and the McTeer building on Commerce and State streets, and a great many others.

1826 Q. Well have you built as many as a hundred or more buildings in Knoxville?
A. I have sir.
Q. The buildings above specifically stated, were they large or small buildings?
A. These stated here are large buildings.
Q. Mr. Getaz, do you think you are familiar with the prices of materials and labor, and the cost of construction work, such as is done by general contractors and builders during the period from 1880 to 1901?
A. I am sir.
Q. Have you examined the statement or estimate of cost of construction of certain portions of the Knoxville Water plant in the light of the estimates made of such costs by William Wheeler in his deposition taken in this case?

A. I have sir.

Mr. CALDWELL: I desire here to ask the witness a few questions affecting his competency.

Q. How much of the testimony in this case have you read, Mr. Getaz?

A. Only about the building of the Water works.

Q. That was several hundred pages, wasn't it?

A. The last page was "502;" I didn't read them all, but I went through them.

Q. You went through the 500 pages of the testimony?

A. Of the building mostly; I didn't go into the pipe question.

Mr. CALDWELL: We desire to except to this testimony under the rule.

The COMMISSIONER: For the witness to have read the questions and answers would have been squarely against the rule, except to have submitted to him the schedules.

1827 Q. I will ask you if you read the estimate with any other view than to ascertain quantities?

A. I read only that part in regard to the buildings, and the dates they were put up, and the quantity of material. As to the testimony given, I didn't pay any attention to that.

Q. Did you read anything but the estimates of Mr. William Wheeler?

A. Only the estimates.

Q. Now what did you read of it?

A. I didn't read the entire 502 pages; I only read a page here, one here and one here.

Q. You mean you read the estimates as contained in those pages?

A. Yes sir. I didn't say that I had read the 502 pages. I went through the 502 pages.

Q. Did you read any part of the pages except those relating to the estimates?

A. I did not; I took only that which had the headings for estimates of buildings.

Q. Wasn't that the instructions of counsel to you, to read that part only?

A. You gave me this book and told me to get the schedules and prices, and I did it—that paper you have in your hand, I think that is the same one.

Q. Did you read anything but the schedules?

A. No sir. I may have read one page or two pages of the testimony.

Mr. CALDWELL: We did not ask for the rule in this case, and we do not think it should have been asked, and we would have been perfectly willing for Mr. Getaz to have come in and heard
1828 what every witness said; but if General Pickle will waive his rule as to the presence of Mr. Kimball to be present and hear the examination, we will waive the rule as to Mr. Getaz; otherwise we stand squarely on our rights in the case.

Gen. PICKLE: It is a matter of practice that should be settled now. If we cannot look to these schedules, or have our experts look to them for this information, I am unable to see how we are going to get at the question.

The COMMISSIONER: To arrive at any practical result, it is necessary that the witnesses should have knowledge of the schedules, the property under consideration, and therefore I would have to hold that the witnesses had a right to examine the schedules prepared in advance of any testimony by the complainant's witnesses and submitted in advance to all of complainant's witnesses, but when the witness has taken 502 pages of the depositions and has read them indiscriminately without confining himself to the schedules, he has violated the rule, and if complainant insists, cannot go on with the testimony.

Counsel now agree upon the part of defendant that the rule may be waived as to the presence of Mr. Kimball during the further taking of these depositions and thereupon counsel for complainant withdraws any objection to Mr. Getaz testifying on account of his having read the testimony.

1829 COMMISSIONER: The rule as to the presence of witnesses for the balance of the hearing is abrogated by consent of both parties.

Q. Mr. Getaz, did you make an examination of the buildings and other parts of the construction of the Knoxville Water Company's plant that you have undertaken to estimate?

A. I have.

Q. State whether or not you have made up a statement showing your estimate upon the parts of the plant that you have undertaken to detail with the over-estimates thereon as compared with Mr. William Wheeler's estimates, and if so, please make the same a part of your deposition as an answer to this question?

A. Yes sir, I have made an estimation in writing, and it is as follows:—

Report of David Getaz and Stephen Munding on Additions to Plant of Knoxville Water Company in Comparison With Prices and Values at Knoxville, With the Estimates of Cost Set Out in the Deposition of Mr. William Wheeler, Volume "1," Pages 23 to 99, Inclusive, and Volume "2," Page 498 and Following.

Plant and Improvements at River Station.

Engine house and pit (page 23):

Earth excavation and regrading 560 cu. yds. at 30 cents	$168.00
We cannot ascertain if this quantity is correct. The price of 30 cents charged is excessive. Twenty cents is a good price for said work. We have 560 cu. yds. at 20¢ equals.....	112.00

1830	An over-charge of		$56.00
	Rock excavation, 1475 cu. yds. at $1.87½	$2765.00	
	We cannot ascertain if the quantity is correct. The price of $1 87½ cents is excessive, as $1.00 per cu. yd. is a fair price for such work. 1475 cu. yds at $1.00 equals.....	1475.00	
	And over-charge of		$1290.63
	Wall of engine pit, 90,000 brick laid in cement at $15.00	$1350.00	
	We have measured this work and found the quantity approximately correct. The price of $15.00 per thousand is exclusive, as $12.00 per thousand is a fair price. 90,000 at $12.00	1080.00	
	An overcharge of		$270.00
	Foundation of Building from rock bed, 45,000 brick at $15.00	$675.00	
	We cannot ascertain this quantity. The price of $15.00 is excessive, as $12.00 is a fair price. 45,000 brick at $12.00.....	540.00	
	An overcharge of		$135.00
	Section pipe, tunnel through rock with brick lining, 38½ feet at $20.00.....	$770.00	
	We cannot ascertain if this price is correct or not.		
	Cement floor, 735 sq. ft. at 16⅔¢.....	122.50	
	We find 630 sq. ft. only, or 70 sq. yards at $1.25 per sq. yd.....	87.50	
	An over-charge of		$35.00
	Wooden floor	40.00	
	We cannot ascertain if correct or not, as this floor is all gone.		
1831	Stairs to old engine pit.....	$250.00	
	This work can be done for.....	225.00	
	An over-charge of		$25.00
	Above ground line, 75,000 brick in lime mortar at $13	$975.00	
	We found only 73,000 brick here. The price of $13.00 per thousand is excessive, as $8.00 per thousand for such work is a fair price. 73,000 brick at $8.00 per thousand.....	584.00	
	An over-charge of.....		$391.00

10 window sills at $4.00	$40.00	
The price of $4.00 for each sill is excessive at $3.00 is a fair price. *Lo* sills at $3.00	30.00	
An over-charge of		$10.00
10 large 12 by 18 lights and 2 circular windows, 33 inches and frames at $10.00	$110.00	
These windows can be furnished at $9.50	95.00	
An over-charge of		$15.00
One door and frame at	$12.00	
A fair price for this is	10.00	
An over-charge of		$2.00
Boarding, 2750 feet at $22.00	$60.50	
The price of $22.00 is excessive as $20.00 is a fair price for it. 2750 ft. at $20.00	55.00	
An over-charge of		$5.50
Railing around pit	$75.00	
We find this railing 129 feet to be worth 50 cents, equals	64.50	
An over-charge of		$10.50
Hardware, Nails &c. for building	$100.00	
The price charged in excessive. $50.00 will cover the nails and hardware for this work.	50.00	
An over-charge of		$50.00
Carpenter work	$224.00	
1832 The price charged for this carpenter work is excessive, is $132.00 will cover all the carpenter work	132.00	
An over-charge of		$92.00
Boiler House, Frame sides and Roof (Page 25) 5500 feet lumber at $16.00	$88.00	
We find that the price of $16. charged is excessive, $14.00 per thousand would be a fair price for such lumber. 5500 feet at $14.00 equals	77.00	
An over-charge of		$11.00
1 window 12 by 14	$8.00	
No such window found on the plan for this building, consequently an over-charge of		$8.00
Carpenter work	$175.00	
This charge for carpenter work is excessive as $111.00 is a fair price for the same	111.00	
An over-charge of		$64.00

Brick paved floor, 7500 brick at $13.00.....	$97.50	
The price of $13.00 per thousand is excessive as $8.00 per thousand is a fair price. 7500 brick at $8.00	60.00	
An over-charge of		$37.50
Tool and storage house, 22 by 16 ft. (P. 26).	$161.40	
We find that this house has been moved on Craig Street; we find also that on pages "27" and "28" full quantities of material and labor have been charged, and consequently the charge of $161.40 is not correct, but is an entire over-charge of.....		$161.40
Chimney, Iron stack, 42 in. by 80 ft. high, 9750 brick and cement at $15.00.....	$146.25	
We find that the price charged is excessive and that $12.00 per thousand is a fair price, or	117.00	
An over-charge of		$29.25
1833 Iron clean-out door and frame.....	$10.00	
A fair price is	8.00	
An over-charge of		$2.00
Store house, frame 38 by 14 ft. (Page 27) 1100 brick in foundation at $15.00 equals..	$16.50	
We cannot ascertain if the quantity is correct. The price charged is excessive, as $12.00 would be a fair price. 1100 brick at $12. equal-	13.20	
An over-charge of		$3.30
Fence 125 ft. long by 10 feet high.....	$59.00	
Including labor erecting $20.00	20.00	
This labor charge is excessive, as $15.00 is a fair price for it.....	15.00	
An over-charge of		$5.00
Rock Work, 1159.43 cu. yds. (Page 33) at $1.75	$2029.00	
A $1.75 per yard charge is excessive. $1.00 per yard is a fair price. 1159.43 cu. yds. at $1.00	1159.43	
An over-charge of $.75 per cubic yard, equals 869.57		$869.57
Replacing macadam on the streets, 27,101 feet at 6 cents	$1626.06	
The price charged of 6 cents is excessive. 5 cents per lineal foot is a fair price. 27,101 ft. at 5 cents, equals.....	1355.05	
An over-charge of		$271.01

Rock excavation 345.87 cu. yds. (Page 36) at $1.75	$605.27	
This is an excessive charge as it should be $1.00 per cu. yd. 345.87 cu. yds. at $1.00 equals	345.87	
An over-charge of		$259.40
1834 Replacing macadam on streets 15123 ft. at 6 cents	$907.38	
This charge should be 5 cents instead of 6 cents, which equals	756.15	
An over-charge of		$151.23
Rock excavation 100.47 cu. yds. at $1.75	$175.82	(P. 37)
This is an excessive charge and should be $1.00 instead of $1.75 charge. 100.47 at $1.00	100.47	
An over-charge of		$75.35
Replacing macadam on streets, 4547 ft. at 6 cents	272.82	
This should be a charge of 5 cents instead of 6 cents. 4547 feet at 5 cents	227.35	
An over-charge of		$44.97

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Rock excavation 85.48 cu. yds. at $1.75	$149.59	
This charge should be $1.00 per cu. yd. making	85.48	
An over-charge of		$64.11
Replacing macadam 4077 ft. at 6 cents	$244.62	
This charge should be 5 cents, making	203.85	
An over-charge of		$40.77

(Page 43.)

Rock excavation on 1485.5 ft. at .01 cu. yds.; 14.86 cu. yds. at $1.75	$26.01	
This charge should be $1.00 instead of $1.75	14.86	
An over-charge of		$11.15
Replacing macadam 568 feet at 6 cents	$34.08	
This charge should be 5 cents instead of 6 cents	28.40	
An ocer-charge of		$5.68

1835 (Page 44.)

Pumping station and filter plant:

1136 yards excavation and grading at 30 cents per yard	$340.80	
The price charged is excessive. 20 cents is a fair price for this grading. 1136 yards at 20¢ equals	227.20	
An over-charge of		$113.60
40,000 brick in hydraulic cement in foundations at $15.00 per M	$600.00	
The price given $15.00 is excessive, and $12.00 is a fair price. 40,000 brick at $12.00	480.00	
An over-charge of		$120.00
61,000 vitrified brick in Portland cement (around settling basin) at $25.00	$1525.00	
The price charged $25.00 is excessive; $19.00 is a fair price for it. 61,000 brick at $19 equal	1159.00	
An over-charge of		$366.00

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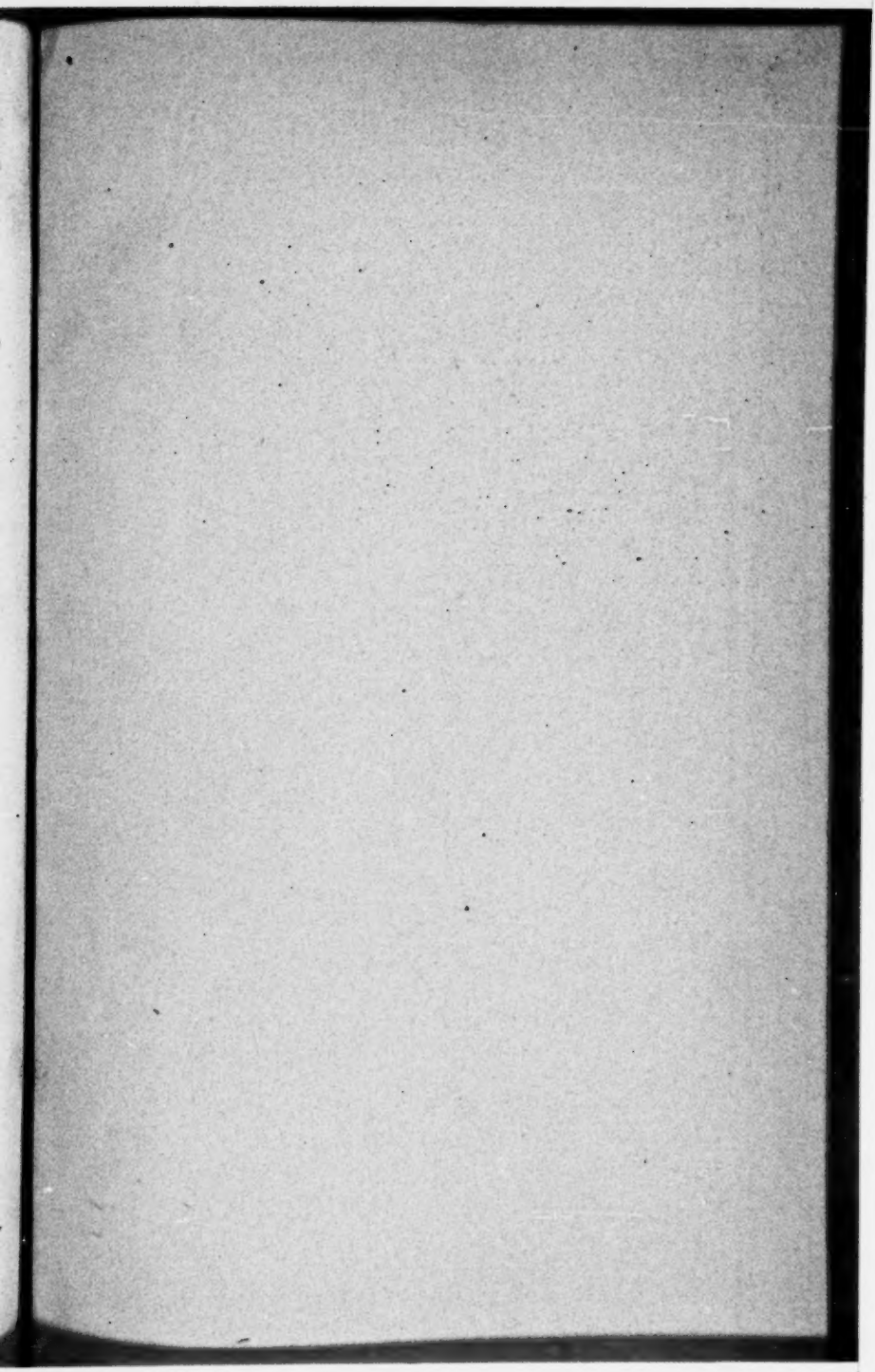
Stand pipe 32 feet diameter by 85 feet high. 80 yards excavation and grading at 30 cents	$24.00	
This charge should be 20 cents or	16.00	
An over-charge of		$8.00
11,200 common brick in cement at $15.00	$168.00	
This charge should be $12 instead of $15. 11,200 brick at $12.00	134.40	
An over-charge of		$33.60
1700 vitrified brick in cement at $22.50	$38.25	
The price of $22.50 is excessive. $18.00 is a good price for such brick, or	30.60	
An over-charge of		$7.65
1836 6.32 yards of cement grout at $13.00	$82.16	
The price of $13.00 charged for this grouting is excessive. $8.00 is a fair price for the same. 6.32 yards at $8.00	50.56	
An over-charge of		$31.60